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places appear a variety of inscriptions. Near the catacombs there is an enormous reservoir, hewn out of this soft stone. The roof is supported by parallel rows of square pillars. Its dimensions are 150 feet by seventy-five, and thirty-five in depth. On a hill west of the town are the remains of the citadel, o. an oval form, surrounded by a well built wall, flanked by towers and a double ditch. The interior is full of ruined houses and columns. Long.  $33^{\circ} 55'$  E., lat.  $36^{\circ} 20' N.$

SELENGA, a considerable river of Siberia, in the government of Irkoutsk, rising beyond the frontier, in the country of the Mongols, where it receives the Kharatale and the Iga. On approaching the frontiers it begins to be navigable, then flows from south-east to north-west, and falls by three mouths into the lake Baikal. The Russians have built several towns on its right bank, particularly Verschnei Oudinsk, Seleninsk, and Kiachta. A great quantity of a species of white fish, called omouii, is taken in this river towards the end of August.

SELENITE is the term used by Dr. Thomson and other modern chemists for what was formerly called selenites. It is the same with gypsum.

SELENITES, in the old system of mineralogy, is the name of a large class of fossils, of which it is now unnecessary to describe the characters, since better arrangements and more accurate descriptions have been made. See MINERALOGY. Of the first order there were three genera; viz. 1. Leptodecarhombes, 2. Pachodecarhombes; 3. Tetradecharhombes. Of the second there were also three genera:—1. Ischiambluces; 2. Isambluces; 3. Oxuciae. Of the third one, inamblucia. Of the fourth also only one genus, the sanidia. Of the fifth one, cathetolipes. Of the sixth order there were two genera; viz. 1. Lepastræ; 2. Trichestra. Of the seventh one genus, symplexia.

SELENITES, in chemistry, called also gypsum spatosum, a species of gypsum or plaster of Paris. See GYPSUM, and MINERALOGY.

SELENIUM, in chemistry, is a new elementary body, extracted by M. Berzelius from the pyrites of Fahlun, which, from its chemical properties, he places between sulphur and tellurium, though it has more properties in common with the former than with the latter substance. It was obtained in exceedingly small quantity from a large portion of pyrites. For the mode of extraction we must refer to his long and elaborate papers, translated from the Annales de Chimie et de Physique, ix. et seq. into the Annals of Philosophy, for June, August, October, and December 1819, and January 1820.

When selenium, after being fused, becomes solid, its surface assumes a metallic brilliancy of very deep brown color, resembling polished haematites. Its fracture is conchoidal, vitreous, the color of lead, and perfectly metallic. The wder of selenium, has a deep red color, but sticks together readily when pounded, and then unites a gray color and a smooth surface, as ppens to antimony and bismuth. In very thin mats selenium is transparent, with a ruby red luster. When heated it softens; and at  $212^{\circ}$  it becomes semi-liquid, and melts completely at a tempe-

rature a few degrees higher. During its cooling it retains for a long time a soft and semi-fluid state. Like Spanish wax it may be kneaded between the fingers, and drawn out into long threads, which have a great deal of elasticity, and in which we easily perceive the transparency when they are flat and thin. These threads, viewed by transmitted light, are red; but, by reflected light, they are gray, and have the metallic lustre. When selenium is heated in a retort, it begins to boil at a temperature below that of a red heat. It assumes the form of a dark yellow vapor, which, however, is not so intense as that of the vapor of sulphur; but it is more intense than chlorine gas. The vapor condenses in the neck of the retort, and forms black drops, which unite into larger drops, as in the distillation of mercury.

If we heat selenium in the air, or in vessels so large that the vapor may be condensed by the cold air, a red smoke is formed, which has no particular smell, and which is condensed in the form of a cinnabar-red powder, yielding a species of flowers, as happens to sulphur in the same circumstances. The characteristic smell of horse-radish is not perceived till the heat becomes great enough to occasion oxidation.

Selenium is not a good conductor of heat. We can easily hold it between the fingers and melt it at the distance of one or two lines from the fingers without perceiving that it becomes hot. It is also a non-conductor of electricity. On the other hand M. Berzelius was not able to render it electric by friction. It is not hard; the knife scratches it easily. It is brittle like glass, and is easily reduced to powder. Its specific gravity is between 4.3 and 4.32.

The affinity of selenium for oxygen is not very great. If we heat it in the air, without touching it with a burning body, it is usually volatilised, without alteration; but if it is touched by flame its edges assume a fine sky-blue color, and it is volatilised with a strong smell of horse-radish. The odorous substance is a gaseous oxide of selenium, which, however, has not been obtained in an insulated state, but only mixed with atmospheric air. If we heat selenium in a close phial filled with common air, till the greatest part of it is evaporated, the air of the phial acquires the odor of oxide of selenium in a very high degree. If we wash the air with pure water, the liquid acquires the odor of the gas; but, as there are always formed traces of selenic acid, this water acquires the property of reddening litmus paper feebly, and of becoming muddy when mixed with sulphureted hydrogen gas. Selenic oxide gas is but very little soluble in water, and does not communicate any taste to it.

If we heat selenium in a large flask filled with oxygen gas, it evaporates without combustion, and the gas assumes the odor of selenic oxide, just as would have happened if the sublimation had taken place in common air; but, if we heat the selenium in a glass ball of an inch diameter, in which it has not room to volatilize and disperse, and if we allow a current of oxygen gas to pass through this ball, the selenium takes fire just when it begins to boil, and burns with a feeble flame, white towards the base, but green

or greenish-blue at the summit, or towards the upper edge. The oxygen gas is absorbed, and selenic acid is sublimed into the cold parts of the apparatus. The selenium is completely consumed without any residue. The excess of oxygen gas usually assumes the odor of selenic oxide. Selenic acid is in the form of very long four-sided needles. It seems to be most readily formed by the action of nitro-muriatic acid on selenium. The selenic acid does not melt with heat; but it diminishes a little in bulk at the hottest place, and then assumes the gaseous form. It absorbs a little moisture from the air, so that the crystals adhere to each other, but they do not deliquesce. It has a pure acid taste, which leaves a slightly burning sensation on the tongue. It is very soluble in cold water, and dissolves in almost every proportion in boiling water. M. Berzelius infers the composition of selenic acid, from several experiments, to be,

Selenium, 71·261 100·00 1 prime 4·96

Oxygen, 28·739 40·83 2 primes 2·00

If into a solution of selenic acid in muriatic acid we introduce a piece of zinc or of polished iron, the metal immediately assumes the color of copper, and the selenium is gradually precipitated in the form of red, or brown, or blackish flocks, according as the temperature is more or less elevated. When seleniate of potassa is heated with muriate of ammonia, selenium is obtained by the deoxidising property of the ammonia; but in this case we always lose a small quantity of selenium, which comes over with the water in the form of an acid. If we pour dilute muriatic acid on the compound of selenium and potassium dissolved in water, seleniureted hydrogen gas is evolved. Water impregnated with it precipitates all the metallic solutions, even those of iron and zinc, when they are neutral. Sulphur, phosphorus, the earths, and the metals, combine with selenium, forming seleniurets. Selenic acid neutralises the bases. Selenium has been recently found in two minerals; one is from Skrickerum, in the parish of Tryserum, in Smoland.

SELENOGRAPHY, *n. s.* Fr. *selenographic*; Gr. σελήνη and γράφω. A description of the moon.

Hevelius, in his accurate *selenography*, or description of the moon, hath well translated the known appellations of regions, seas, and mountains, unto the parts of that luminary. Browne.

SELEUCIA, in ancient geography, a city of Asia, surnamed Babylonia, because situated on its confines, at the confluence of the Euphrates and Tigris. Ptolemy places it in Mesopotamia. It is called also Seleucia ad Tigrim, by Polybius, Strabo, Isidorus, and Chaneenus. It is watered on the south by the Euphrates, and east by the Tigris (Theophylactus), generally agreed to have been built or enlarged by Selucus Nicator, by means of which Babylon came to be deserted. It is said to have been originally called Coche (Ammian, Eutropius), though others, as Arian, distinguish it, as a village, from Seleucia; and, according to Zosimus, the ancient name of Seleucia was Zochasia. It is now called Bagdad.

SELEUCIA was also the name of no fewer than eight other cities, all named from Seleucus Nicator, and situated in the kingdom of Syria, in Cilicia and near the Euphrates.—Flor. iii. 11.

Plut. Mela. i. 12. Strab. xi. 5. Plin. vi. 23. Lempr.

SELEUCIA ILBER, an ancient town of Syria on the sea coast, with a bishop's see; eight miles north of Antioch.

SELEUCIDÆ, a surname or patronymic of the Syro-Grecian monarchs of Syria, who reigned in that country from the death of Alexander the Great, till it was reduced to a Roman province; so named from Seleucus Nicator, the first of them. See SYRIA.

SELEUCIDE, ERA OF THE, in chronology, or the Syro-Macedonian era, is a computation of time commencing from the establishment of the Seleucidæ in Syria. This era we find expressed in the books of the Maccabees, and on a great number of Greek medals struck by the cities of Syria, &c. The rabbins call it the era of contracts, and the Arabs therick dilkarmain, that is, the 'era of the two horns.' According to the best accounts, the first year of this era falls in the year 311 B. C. being twelve years after Alexander's death.

SELEUCIS, or SELEUCENA, a division of Syria, so named from Seleucus Nicator. It was also called Tetrapolis, from its containing four cities: viz. Seleucia, so named from Seleucus; Antioch from his father; Laodoea, after his mother; and Apamea, from his wife.—Strabo xvi.

SELEUCUS I., surnamed Nicator, or the conqueror, one of the chief generals under Alexander the Great, and, after his death, founder of the race of princes called Seleucidæ. He is equally celebrated as a renowned warrior, and as the father of his people; yet his virtues could not protect him from the fatal ambition of Ceraunus, one of his courtiers, by whom he was assassinated, A. C. 280. See SYRIA.

SELEUCUS was also the name of other five kings of Syria; distinguished by the surnames of Callinicus, Ceraunus, Philopater, &c. See SYRIA.

SELF, <i>pron.</i> , plur. selves,	Sax. <i>rýlf</i> , <i>rýlfa</i> ;
SELFISH, <i>adj.</i>	Balg. <i>self</i> , <i>selve</i> .
SELFISHNESS, <i>n. s.</i>	Its primary signifi-
SELFISHLY, <i>adv.</i>	cation seems to
SELF-SAME, <i>adj.</i>	be that of an ad-
	jective. Very; particular; this above others;
	sometimes, one's own. Dr. Johnson's observa-
	tions on the force of this word are so much in
	point that we must add them all.—It is united
	both to the personal pronouns, and to the neutral
	pronoun <i>it</i> , and is always added when they are
	used reciprocally, or return upon themselves: as,
	I did not hurt <i>him</i> , he hurt <i>himself</i> ; the people
	hiss <i>me</i> , but I clap <i>myself</i> ; thou lovest <i>thyself</i> ,
	though the world scorns <i>thee</i> . It is sometimes
	used emphatically in the nominative case: as,
	<i>myself</i> will decide it; I <i>myself</i> will come; <i>himself</i>
	shall revenge it. This use of <i>self</i> , thus com-
	pounded, without the pronoun personal, is
	chiefly poetical. Compounded with <i>him</i> , a pro-
	noun substantive, <i>self</i> is in appearance an adjec-
	tive: joined to <i>my</i> , <i>thy</i> , <i>our</i> , <i>your</i> , pronoun
	adjectives, it seems a substantive. Even when
	compounded with <i>him</i> it is at last found to be a
	substantive, by its variation in the plural, con-
	trary to the nature of English adjectives, as <i>him-</i>

*self, themselves. Myself, himself, themselves, and the rest may, contrary to the analogy of my, him, them, be used as nominatives.* It often adds only emphasis and force to the pronoun with which it is compounded : as, he did it *himself*. It signifies the individual, as subject to his own contemplation or action. It is much used in composition, which it is proper to explain by a train of examples. It is to be observed that its composition in Shakspeare is often harsh.

In their anger they slew a man, and in their *self*-will they digged down a wall. *Genesis xl ix. 6.*

The spark of noble courage now awake,  
And strive your excellent *self* to excel.

*Faerie Queene.*

Before the door sat *self-consuming care*,  
Day and night keeping wary watch and ward. *Id.*

I have no great cause to look for other than the *self-same* portion and lot, which your manner hath been hitherto to lay on them that concur not in opinion with you. *Hooker's Preface.*

Then held she her tongue, and cast down a *self*-accusing look, finding that in herself she had shot out of the bow of her affection a more quick opening of her mind than she minded to have done. *Sidney.*

Alas ! while we are wrapt in foggy mist  
Of our *self-love*, so passions do deceive,  
We think they hurt when most they do assist. *Id.*

Till Strephon's plaining voice him nearer drew,  
Where by his words his *self-like* case he knew. *Id.*

Shoot another arrow that *self-way*  
Which you did shoot the first.

*Shakspeare. Merchant of Venice.*

The cruel ministers, by *self* and violent hands,  
Took off her life. *Shakespeare.*

My strange and *self-abuse*  
Is the initiate fear that wants hard use.

*Id. Macbeth.*

I have heard so much,  
And with Demetrios thought t' have spoke thereof ;  
But, being over full of *self-affairs*,  
My mind did lose it. *Id. Midsummer Night's Dream.*

He walks, and that *self-chain* about his neck,  
Which he forswore. *Shakespeare.*

It is in my power, in one *self-born* hour,  
To plant and o'erwhelm custom. *Id. Winter's Tale.*

The stars above us govern our conditions ;  
Else one *self-mate* and mate could not beget  
Such different issues. *Shakespeare.*

I'm made of that *self-metal* as my sister,  
And prize me at her worth. *Id. King Lear.*

In my school-days, when I lost one shaft,  
I shot his fellow of the *self-same* flight  
The *self-same* way. *Shakespeare.*

He conjunct, and flattering his displeasure,  
Tript me behind : being down, insulted, railed,  
Got praises of the king  
For him attempting who was *self-subdued*. *Id.*

The Everlasting fixt  
His cannon 'gainst *self-slaughter*. *Id. Hamlet.*

He's full of alteration  
And *self-reproving*. *Id. King Lear.*

More or less to others paying,  
Than by *self-offences* weighing :

Shame to him whose cruel striking

Kills for faults of his own liking ! *Shakespeare.*

*Self* love, my liege, is not so vile a sin

As *self-neglecting*. *Id. Henry V.*

His lords desire him to have borne  
His bruised helmet and his bended sword

Before him through the city : he forbids it,

Being free from vainness and *self-glorious* pride. *Shakespeare.*

In these *self* hills the air is so thin that it is not sufficient to bear up the body of a bird. *Raleigh.*

Since consciousness always accompanies thinking, and it is that that makes every one to be what he calls *self*, and thereby distinguishes himself from all other thinking things ; in this alone consists personal identity, i. e. the sameness of a rational being. *Bacon.*

The most ordinary cause of a single life is liberty, especially in certain *self-pleasing* and humourous minds. *Id.*

They turn round like grindle-stones,  
Which they dig out fro' the dells,

For their bairns bread, wives, and sells. *Ben Jonson.*

Up through the spacious palace passed she  
To where the king's proudly reposed head,

If any can be soft to tyranny,  
And *self-tormenting* sin, had a soft bed. *Crashaw.*

Hast thou set up nothing in competition with God ;  
no pride, profit, *self-love*, or *self-interest* of thy own ? *Duppa.*

Seneca approves this *self-homicide*. *Hakewill.*  
Thyself from flattering *self-conceit* defend,  
Nor what thou dost not know, to know pretend. *Denham.*

Farewell, my tears ;  
And, my just anger, be no more confined  
To vain complaints or *self-devouring* silence. *Id.*

Repent the sin ; but, if the punishment  
Thou canst avoid, *self-preservation* bids. *Milton.*

Hiem fast sleeping soon he found,  
In labyrinth of many a round *self-rolled*. *Id.*

Oft times nothing profits more  
Than *self-esteem*, grounded on just and right,  
Well managed. *Id. Paradise Lost.*

He sorrows now, repents, and prays contrite,  
My motions in him : longer than they move,  
His heart I know how variable and vain,  
*Self-left*. *Milton.*

Flight pursued one way the *self-same* hour. *Id.*

Next to the knowledge of God, this knowledge of our *selves* seems most worthy of our endeavour. *Hale.*

They are yet more mad to think that men may rest  
by death, though they die in *self-murder*, the greatest sin. *Graunt.*

With a joyful willingness these *self-loving* reformers took possession of all vacant preferments, and with reluctance others parted with their beloved colleges and subsistence. *Walton.*

This sublimer love, being, by an intimate conjunction with its object, thoroughly refined from all base dross of *selfishness* and interest, nobly begets a perfect submission of our wills to the will of God. *Boyle's Seraphick Love.*

By all human laws, as well as divine, *self-murder* has ever been agreed on as the greatest crime. *Temple.*

At that *self* moment enters Palamon  
The gate of Venus. *Dryden.*

From Atreus though your ancient lineage came ;  
Yet my *self-conscious* worth, your high renown,  
Your virtue, through the neighbouring nations blown. *Id.*

He has given you all the commendation which his *self-sufficiency* could afford to any. *Id.*

All these receive their birth from other things,  
But from himself the phoenix only springs ;  
*Self-born*, begotten by the parent flame

In which he burned, another and the same. *Id.*

Thou first, O king ! release the rights of sway ;  
Power, *self-restrained*, the people best obey. *Id.*

A *self-conceited* fop will swallow any thing. *L'Estrange.*

It is by the consciousness it has of its present thoughts and actions, that it is *self* to it *self* now, and so will be the same *self*, as far as the same consciousness can extend to actions past or to come.

*Locke.*

Eighteen and nineteen are equal to thirty-seven, by the same *self*-evidence that one and two are equal to three.

*Id.*

I am as justly accountable for any action done many years since, appropriated to me now by this *self*-consciousness, as I am for what I did the last moment.

*Id.*

Each intermediate idea agreeing on each side with those two, it is immediately placed between : the ideas of men and *self*-determination appear to be connected.

*Id.*

Consciousness being interrupted, and we losing sight of our past *seizes*, doubts are raised whether we are the same.

*Id.*

Body cannot be *self*-existent, because it is not *self*-moved ; for motion is not of the essence of body, because we may have a definitive conception of body, abstracted from that of motion : wherefore motion is something else besides body, something without which body may be conceived to exist.

*Grew.*

Light, which of all bodies is nearest allied to spirit, is also most diffusive and *self*-communicative.

*Norris.*

God, who is an absolute spiritual act, and who is such a pure light as in which there is no darkness, must needs be infinitely *self*-imparting and communicative.

*Id.*

Are not these strange *self*-delusions, and yet attested by common experience ?

*South's Sermons.*

If the image of God is only sovereignty, certainly we have been hitherto much mistaken, and hereafter are to beware of making ourselves unlike God, by too much *self*-denial and humility.

*South.*

Let a man apply himself to the difficult work of *self*-examination, by a strict scrutiny into the whole estate of his soul.

*Id.*

A fatal *self*-imposture, such as defeats the design, and destroys the force, of all religion.

*Id.*

When he intends to bereave the world of an illustrious person, he may cast him upon a bold *self*-opinion physician, worse than his distemper, who shall make a shift to cure him into his grave.

*Id.*

This fatal hypocrisy and *self*-deceit is taken notice of in these words, Who can understand his errors ? cleanse thou me from secret faults.

*Addison's Spectator.*

Men had better own their ignorance, than advance doctrines which are *self*-contradictory.

*Id.*

What could the most aspiring *selfish* man desire more, were he to form the notion of a being to whom he would recommend himself, than such a knowledge as can discover the least appearance of perfection, and such a goodness as will proportion a reward to it ?

*Id.*

The guilt of perjury is so *self*-evident, that it was always reckoned amongst the greatest crimes, by those who were only governed by the light of reason.

*Addison.*

*Self*-sufficiency proceeds from inexperience.

*Id.*

By the blast of *self*-opinion moved, We wish to charm, and seek to be beloved.

*Prior.*

Confidence, as opposed to modesty, and distinguished from decent assurance, proceeds from *self*-opinion occasioned by ignorance or flattery.

*Collier of Confidence.*

Bewildered, I my author cannot find, Till some first cause, some *self*-existent mind, Who formed and rules all nature, is assigned.

*Blackmore.*

Nick does not pretend to be a gentleman : he is a tradesman, a *self*-seeking wretch.

*Arbuthnot's History of John Bull.*

Every animal is conscious of some individual, *self*-moving, *self*-determining principle.

*Pope and Arbuthnot. Mart. Scribb.*

Shall nature, erring from her first command, *Self*-preservation, fall by her own hand ? *Granville.*

Living and understanding substances do clearly demonstrate to philosophical inquirers the necessary *self*-existence, power, wisdom, and beneficence of their Maker.

*Bentley.*

If it can intrinsically stir itself, and either commence or alter its course, it must have a principle of *self*-activity, which is life and sense.

*Id. Sermons.*

The philosophers, and even the *Faureans*, maintained the *self*-sufficiency of the godhead, and seldom or never sacrificed at all.

*Bentley.*

Matter is not endued with *self*-motion, nor with a power to alter the course in which it is put : it is merely passive, and must ever continue in that state it is settled in.

*Cheyne.*

I heard in Crete, this island's name ; For 'twas in Crete, my native soil, I came Self-banished thence.

*Pope's Odyssey.*

Achilles' courage is furious and untractable ; tha of Ajax is heavy and *self*-confiding.

*Pope.*

What is loose love ? a transient gust, A vapour fed from wild desire,

A wandering *self*-consuming fire.

*Id.*

By mighty Jove's command, Unwilling have I trod this pleasing land ;

For who *self*-moved with weary wing would sweep Such length of ocean ?

*Id.*

They who reach Parnassus' lofty crown Employ their pains to spurn some others down ; And, while *self*-love each jealous writer rules, Contending wits become the sport of fools.

*Id.*

He can your merit *selfishly* approve, And show the sense of it without the love.

*Id.*

No wonder such a spirit, in such a situation, is provoked beyond the regards of religion or *self*-conviction.

*Swift.*

It may be thought that Ulysses here is too ostentatious, and that he dwells more than modesty allows upon his own accomplishments ; but *self*-praise is sometimes no fault.

*Broome.*

I took not arms till urged by *self*-defence, The eldest law of nature.

*Rowe's Ambitious Stepmother.*

The fondness we have for *self*, and the relation which other things have to our *seizes*, furnishes another long rank of prejudices.

*Watts.*

His labour and study would have shown his early mistakes, and cured him of *self*-flattering delusions.

*Id.*

This is not to be done in a rash and *self*-sufficient manner ; but with an humble dependance on divine grace, while we walk among snares.

*Id.*

The religion of Jesus, with all its *self*-denials, virtues, and devotions, is very practicable.

*Id.*

But, hark ! I'll tell you of a plot, Though dinna ye be speaking o't ; I'll nail the *self*-conceited Scot

As dead's a herring :

Niest time we meet, I'll wad a groat, He gets his fairin !

*Burns.*

Great censoriousness is great hypocrisy. Thou hypocrite, &c., all this is nothing but the effect of woeful *self*-ignorance.

*Mason.*

The reason they are not better acquainted with them is, because they hate *self*-inspection.

*Id.*

Humility is not more necessary to salvation, than *self*-knowledge is to humility.

*Id.*

He trod the very *self-same* ground you tread,  
And victory refuted all he said. *Couper.*

SELF-ACCENSION, or spontaneous inflammation, the burning of a body, animal or vegetable, by a fire produced from the person or body itself.

SELF-COMMAND is that steady equanimity which enables a man in every situation to exert his reasoning faculty with coolness, and to do what the existing circumstances require. It depends much upon the natural temperament of the body, and much upon the moral cultivation of the mind. He who enjoys good health, and has brace'd his frame by exercise, has always a greater command of himself than a man of equal mental powers, who has suffered his constitution to become relaxed by indolence; and he who has from his early youth been accustomed to make his passions submit to his reason, must, in any sudden emergency, be more capable of acting properly than he who has tamely yielded to his passion. Hence recluse and literary men, when forced into the bustle of public life, are incapable of acting where promptness is requisite; and men who have once or twice yielded to a sense of impending danger seldom acquire afterwards that command of themselves which may be necessary to extricate them from subsequent dangers. In one of the earliest battles fought by Frederick the Great, king of Prussia, the sovereign was among the first men who quitted the field: had he done so a second and third time, he would never have become that hero whose actions astonished Europe.

SELF-DEFENCE implies not only the preservation of one's life, but also the protection of one's property, because without property life cannot be preserved in a civilised nation. The extent of property essential to life is indeed small, and this consideration may enable us to decide a question which some moralists have made intricate. By what means, it has been asked, may a man protect his property? May he kill the person who attacks it, if he cannot otherwise repel the attack? That a man, in the state of nature, may kill the person who makes an attack on his life, if he cannot otherwise repel the attack, is a truth which has never been controverted; and he may do the same in civil society, if his danger be so imminent that it cannot be exerted by the interposition of the protection provided by the state. In all possible situations, except the three following, whatever is absolutely necessary to the preservation of life may be lawfully performed, for the law of self-preservation is the first and most sacred of those laws which are impressed upon every mind by the Author of nature. The three excepted situations are those of a soldier in the day of battle, of a criminal about to suffer by the laws of his country, and of a man called upon to renounce his religion. The soldier hazards his life in the most honorable of all causes, and cannot betray his trust, or play the coward, without incurring a high degree of moral turpitude. But the soldier needs hardly be excepted; as, by the very profession in which he is engaged, while he fights for his country, he is necessarily obliged to defend himself against every individual of the

enemy, who attacks him. The criminal under sentence of death cannot, without adding to his guilt, resist the execution of that sentence; for the power of inflicting punishment is essential to society, and society is the ordinance of God. The man who is called upon to renounce his religion ought to submit to the cruellest death rather than comply with that request, since religion is his only security for future and permanent happiness. But, even in this case, Christianity allows the persecuted to fly from persecution if it be possible. In every other situation, that which is absolutely necessary to the preservation of life is undoubtedly lawful. Hence, a person sinking in water is never thought guilty of any crime, though he drag his neighbour after him by his endeavours to save himself; and a man in danger of perishing by shipwreck may drive another from a plank which cannot carry them both, for, since one of two lives must be lost, no law, human or divine, calls upon either of them to prefer his neighbour's life to his own. But though the rights of self-defence authorise us to repel every attack made upon our life, and in case of extremity to save ourselves at the expense of the life of our innocent neighbour, it is not so evident that, rather than give to an unjust demand a few shillings or pounds, we may lawfully deprive a fellow creature of life. A few pounds lost may be easily regained; but life can never be restored. If these pounds, indeed, be the whole of a man's property; if they include his clothes, his food, and the house where he shelters his head—there cannot be a doubt but that, rather than part with them, he may lawfully kill the aggressor, for no man can exist without shelter, food, and raiment. But it is seldom that an attempt is made, or is indeed practicable, to rob a man at once of all that he possesses. The important question then is, may a man put a robber to death rather than part with a small part of his property? Paley doubts whether he could innocently do so in a state of nature, 'because it cannot be contended to be for the augmentation of human happiness, that one man should lose his life or limb, rather than another a pennyworth of his property.' But we think that the protection of property by the death of the aggressor may be completely vindicated upon more general principles. It is necessary, in every state, that property be protected, or mankind could not subsist; and the sum of human happiness will be more augmented by cutting off such worthless wretches than by exposing property to perpetual depredation; and therefore, if general utility be the criterion of moral good, a man may in every case lawfully kill a robber, rather than comply with his unjust demand. But if a man may, without guilt, preserve his property by the death of the aggressor, when it cannot be preserved by any other means, much more may a woman have recourse to the last extremity to protect her chastity from forcible violation. This, indeed, is admitted by Paley himself, and will be controverted by no man who reflects on the importance of the female character, and the probable consequences of the smallest deviation from the established laws of female honor. See SEDUCTION.

**SELF-EXAMINATION**, a duty much insisted on by divines, and particularly the ancient fathers, by way of preparation to repentance. St. Ignatius reduces it to five points, *viz.*—1. A returning thanks to God for his benefits. 2. A begging of grace and light, to know and distinguish our sins. 3. A running over all our actions, occupations, thoughts, and words, to learn what has been offensive to God. 4. A begging of pardon, and conceiving a sincere sorrow for having displeased him. 5. Making a firm resolution not to offend him any more; and taking the necessary precautions to preserve ourselves from it.

**SELF-KNOWLEDGE**, the knowledge of one's own character, abilities, opinions, virtues, and vices. This has always been considered as a difficult though important acquisition. It is difficult, because it is disagreeable to investigate our errors, our faults, and vices; because we are apt to be partial to ourselves, even when we have done wrong; and because time and habitual attention are requisite to enable us to discover our real character. But these difficulties are more than counterbalanced by the advantages of self-knowledge. By knowing the extent of our abilities, we shall never rashly engage in enterprises where our ineffectual exertions may be productive of harm: by investigating our opinions, we may discover those which have no foundation, and those also which lead us insensibly into vice. By examining our virtues and vices, we shall learn what principles ought to be strengthened, and what habits ought to be removed. One of the first advices of the philosophers of antiquity was, *Know thyself*. It is difficult to lay down rules for the acquisition of this self-knowledge, because almost every man is blinded by a fallacy peculiar to himself. But, when one has got rid of that partiality which arises from self-love, he may easily form a just estimate of his moral improvements, by comparing the general course of his conduct with the standard of his duty; and, if he has any doubt of the extent of his intellectual attainments, he will most readily discover the truth by comparing them with the attainments of others who have been most successful in the same pursuits. Should vanity arise in his mind from such a comparison, let him then compare the extent of his knowledge with what is yet to be known, and he will then be in no danger of thinking of himself more highly than he ought to think.

**SELF-LOVE** is that instinctive principle which impels every animal, rational and irrational, to preserve its life and promote its own happiness. It is very generally confounded with selfishness; but the one propensity is quite distinct from the other. Every man loves himself; but every man is not selfish. The selfish man grasps at all immediate advantages, regardless of the consequences which his conduct may have upon his neighbour. This principle is the parent of every vice and crime that disgrace human nature. Self-love only prompts him who is actuated by it to procure to himself the greatest possible sum of happiness during the whole of his existence. Self-love, as distinguished from selfishness, always comprehends the whole of a

man's existence; and, in that extended sense of the phrase, every man is a self-lover; for, with eternity in his view, it is surely not possible for the most disinterested of the human race not to prefer himself to all other men, if their future and everlasting interests could come into competition. But this they never can do; for in the pursuit of a prize which is to be gained only by sobriety, righteousness, and piety, there can be no rivalry; the success of one being no injury to another. It has been a question in morals, whether self-love be not the incentive to every action, however virtuous or apparently disinterested? Those who maintain the affirmative say that the prospect of immediate pleasure, or the dread of immediate pain, is the only apparent motive to action in the minds of infants, and indeed of all who look not before them, and infer the future from the past. They own that when a boy has had some experience, and is capable of making comparisons, he will often decline an immediate enjoyment which he has formerly found productive of evil more than equivalent to all its good; but in doing so they think justly, that he is still actuated by the principle of self-love, pursuing the greatest good of which he knows himself to be capable. After experiencing that truth, equity, and benevolence in all his dealings is the readiest, and indeed the only certain method of securing to himself the kindness and good offices of his fellow-creatures, and much more when he has learned that they will prove infinitely advantageous to him in a future world, they admit that he will practise truth, equity, and benevolence; but still, from the same principle, pursuing his own ultimate happiness as the object which he has always in view. The prospect of this great object will make him feel an exquisite pleasure in the performance of the actions necessary to its attainment, till at last, without attending to their consequences, he will, by the great associating principle, feel a refined enjoyment in the actions themselves, and perform them, as occasions offer, without deliberation or reflection. Such, they think, is the origin of benevolence itself, and of every other virtue. Those who take the other side of the question can hardly deny that self-love, thus modified, may prompt to virtuous and apparently disinterested conduct; but they think it degrading the dignity of man to suppose him actuated solely by motives which can be traced back to a desire of his own happiness. The other theory supposes that the exciting motive is the hope of future happiness, and the dread of future misery; the instinctive scheme supplies a present motive, in the self-complacency arising in the heart from a consciousness of right conduct. The former is a rational motive; the latter has nothing more to do with reason than the enjoyment arising from eating or drinking, or from the intercourse between the sexes. But we need not pursue the subject farther, but conclude with observing that there is certainly a virtuous as well as a vicious self-love, and that

' All true self-love and social are the same.'

**SELF-MURDER**. See SUICIDE.

**SELF-PARTIALITY** is a phrase employed by some philosophers to express that weakness

of human nature through which men overvalue themselves when compared with others. (See Lord Kaines's Art of Thinking). It is distinguished from general partiality, because it is thought that a man is led to over-rate his own accomplishments, by a process of intellect different from that by which he over-rates the accomplishments of his friends or children. The former kind of partiality is wholly selfish; the latter partakes much of benevolence. This distinction may perhaps be deemed plausible by those who consider the human mind as little more than a bundle of instincts; but it must appear ridiculous to such as resolve the greater part of apparent instincts into early and deep-rooted associations of ideas. If the partialities which most men have to their friends, their families, and themselves, be instinctive, they are certainly instincts of different kinds; but an instinctive partiality is a contradiction in terms. Partiality is founded on a comparison between two or more objects; but genuine instincts form no comparisons. See INSTINCT. The origin of self-partiality is not difficult to be found; and our partialities to our friends may be traced to a similar source. By the constitution of our nature we are impelled to shun pain, and to pursue pleasure; but remorse, the severest of all pains, is the never-failing consequence of vicious conduct. By magnifying to himself the temptations which led him astray, and diminishing the injuries which his conduct has done in the world, and by adopting a course diametrically the reverse when estimating the morality or im-morality of the conduct of his neighbours, one soon becomes to believe that he is at least not more wicked than they. Thus is self-partiality formed in the mind, and quickly blinds him who is under its influence so completely, as to hide from him the very faults which he sees and blames in others. Partiality is formed in the very same manner to natural or acquired accomplishments, whether mental or corporeal. These procure respect to him who is possessed of them; and, as respect is accompanied with many advantages, every man wishes to obtain it for himself. If he fail in his attempts, he consoles himself that it is due to his merits, and is only withheld by envy. He compares the particular branch of science or bodily accomplishment in which he himself most excels, with those which have conferred splendor on his rival; and finds that his own excellencies are of the highest order, and entitled to the greatest share of public esteem. Hence the polite scholar despises the mathematician; the reader of Aristotle and Plato all the modern discoveries in physical and moral science; and the mere experimentalist holds in contempt a critical knowledge of the ancient languages. The pupil of the ancients denies the merits of the moderns, whilst the mere modern allows nothing to the ancients; and thus each becomes partial to his own acquisitions, and of course to himself, for having been at the trouble to make them. All partialities are prejudices of the worst kind. They ought therefore to be guarded against with the utmost care. And he who is partial to his own virtue or knowledge will do well to compare the former, not

with the conduct of his neighbour, but with the express rule of his duty; and to consider the latter as no farther valuable than as it contributes to the sum of human happiness.

SEЛИM I., emperor of the Turks, was the second son of Bajazet II. He made war upon his father, and, though defeated in 1511, he at last dethroned him, took him prisoner, and poisoned him, with his elder brother Achmet, and his younger Korkud, an amiable and enlightened prince. He next marched against Campson Gaury, sovereign of Egypt, gained a great victory at Aleppo, and slew their general. But, though the sultan perished in that battle, the Mamelukes determined to oppose the emperor. Selim, entering their country at the head of his army, defeated the Egyptians in two battles, and ordered Tumanbey, the new elected sultan, who had fallen into his hands, to be hanged. He then took Cairo and Alexandria, and soon reduced all Egypt. Thus ended the dominion of the Mamelukes in Egypt, which had continued for more than 260 years. See EGYPT. He confirmed the ancient privileges of the Venetians in Egypt and Syria, by which they carried on their commerce with India, and formed a league with them to destroy the power of the Portuguese in that country. Selim had before this gained a great victory over the Persians, and stripped them of Tauris and Keman. He was preparing to attack Christendom, when he was seized with an ulcerous sore in the back. Thinking that the air of Adrianople would restore his health, he ordered himself to be conducted thither; but he died at Clari in Thrace, on his road to that city, in 1520, in the very spot where he had poisoned his father. He reigned eight years and lived fifty-four. He was a prince of great courage, sobriety, and liberality; he was fond of history, and wrote some verses. But these good qualities were obscured by the most abominable crimes that ever disgraced human nature: he made his way to the throne by shedding the blood of his father, and secured it by murdering his brothers and eight nephews, and every bashaw who had been faithful to his duty.

SEЛИM II., the son of Solyman II. and grandson of Selim I., succeeded his father in 1566. He made a truce for eight years with the emperor Maximilian, and confirmed his father's treaty with the Venetians: but, in 1570, declared war against them, and took Cyprus, where his general Mustapha committed great cruelties. In 1571 he lost the battle of Lepanto, which threw all Constantinople into consternation, and obliged him to make peace with the emperor. He died in 1574, aged fifty-two, with the character of a weak and dissolute prince.

SELINGUNSTAD, or SELIGENSTAD, a town in Hesse-Darmstadt. Population, 2300.

SELINTY, a cape of Caramania, in Asia Minor, formed by a romantic headland, on which are the ruins of the ancient Trajanopolis. The hill rises steeply from the plain, and breaks off into a chain of magnificent cliffs. On the highest point are the ruins of a castle, which commands the hill in every direction, and looks perpendicularly down upon the sea. The ancient line of fortification is marked by a wall, within

which there are many remains of houses; while outside of them, between the foot of the hill and the river, are the remains of large buildings. The most remarkable of these is a low edifice, of about seventy feet by fifty, the top of which is flat, and which appears to have been formerly the basement of some splendid structure. It stands in the centre of a quadrangle, along each side of which there was a row of thirty small columns; but they have been all broken off close to the ground. Lower down the river are the remains of a small theatre. Near its mouth are some baths; and fronting the theatre is a long ruined aqueduct on arches, which, crossing the stream, communicates with a distant hill. At the south-east point of the hill are numerous tombs. The coast is marked by petrified gravel, which, at a distance, has the appearance of loose stones; but, on approaching, proves to be a solid crust of pudding stone. The ancient city was called originally Selinus, until Trajan gave his own name to it.

**SELINUM**, in botany, milk parsley, a genus of the digynia order, and pentandria class of plants; natural order forty-fifth, umbellatae. The fruit is oval, oblong, compressed, plane, and striated in the middle: the involucrum is reflexed; the petals cordate and equal. There are seven species, viz.

*S. carvifolia*, Chabreli, *custriacum*, Monnier, *palustre*, seguieri, and *sylvestre*.

**SELINUNS**, **SELINUS**, or **SELINUNTUM**, in ancient geography, a town on the south of Sicily, founded A. U. C. 127, by a colony from Megara. It was so named from σελονη, parsley, which it abounded with. It was anciently a place of great importance, as is proved by the venerable relics of its ruins still visible at Mazara which was built on its site.—Paus. vi. c. 19.

**SELINUS**, or **SELINE**, a celebrated ancient city on the south coast of Sicily, at the mouth of the Heraclea. Its ruins are seen about seven miles south of Castro Vetranio, and are described as of enormous bulk. From the traces of the walls, the town appears to have been built in the form of a horse-shoe, having a port in the centre; but the latter is now filled up. The chief ruins are two temples, of great extent. A stone of one of them has been lately found to measure twenty-one feet in length, five feet eight inches in height, and six feet nine inches in breadth. On the west side, the walls are in a considerable degree of perfection; and there are two vast flights of steps between this port and the upper part of the city.

**SELINE**, in ancient geography, the name of six rivers; viz. one each in Achaea, Cilicia, Elis, and Sicily; and of two in Ephesus: also, 7. of a town in Cilicia, where Trajan died: and, 8. of a lake at the origin of the Cayster.—Livy Strabo, Pliny.

**SELISIA**, a river of Maritime Austria, in Fruli, which joins the Cobera and forms the Meduna.

**SELKIRK** (Alexander), whose adventures gave rise to the well-known historical romance of Robinson Crusoe, was born at Largo, in Fife, in 1676, and was bred a seaman. He went from England in 1703, in the capacity of master of a

small vessel called the **Cinque Ports**, Charles Pickering captain, burthen about ninety tons, with sixteen guns, and sixty-three men; and in September the same year sailed from Cork, in company with another ship of twenty-six guns, and 120 men, called the **St. George**, commanded by that famous navigator William Dampier, intending to cruise against the Spaniards in the South Sea. On the coast of Brasil Pickering died, and was succeeded in his command by his lieutenant Stradling. They proceeded on their voyage round Cape Horn to the island of Juan Fernandez, whence they were driven by the appearance of two French ships of thirty-six guns each, and left five of Stradling's men there on shore, who were taken off by the French. Hence they sailed to the coast of America, where Dampier and Stradling quarrelled, and separated by agreement, on the 19th of May, 1704. In September following, Stradling came again to the island of Juan Fernandez, where Selkirk and his captain had a difference, which, with the circumstance of the ship's being very leaky and in bad condition, induced him to determine on staying there alone; but, when his companions were about to depart, his resolution was shaken, and he desired to be taken on board. The captain, however, refused to admit him, and he was obliged to remain, having nothing but his clothes, bedding, a gun, and a small quantity of powder and ball; a hatchet, knife, and kettle; his books, and mathematical and nautical instruments. He kept his spirits tolerably till he saw the vessel put off, when (as he afterwards related) his heart yearned within him, and melted at parting with his comrades and all human society at once.

Such is the rooted love we bear mankind,  
All ruffians as they are. Thomson.

Left sole monarch of the island, with plenty of the necessaries of life, he found himself in a situation hardly supportable. He had fish, goat's flesh, turnips and other vegetables; yet he grew dejected, languid, and melancholy, to such a degree as to be scarcely able to refrain from doing violence to himself. Eighteen months passed before he could, by reasoning, reading his Bible, and study, be thoroughly reconciled to his condition. At length he grew happy, employing himself in decorating his huts, chasing the goats, whom he equalled in speed, and scarcely ever failed of catching. He also tamed young kids, and kept a guard of tame cats about him, to defend him when asleep from the rats, which were very troublesome. When his clothes were worn out, he made others of goat skins, but could not succeed in making shoes, with the use of which, however, habit, in time, enabled him to dispense. His only liquor was water. He computed that he had caught 1000 goats during his abode in the island; of which he had let go 500, after marking them by slitting their ears. Commodore Anson's people, who were there about thirty years after, found the first goat which they shot upon landing was thus marked, and, as it appeared to be very old, concluded that it had been under the power of Selkirk. He made companions of his tame goats and cats, often dancing and singing with them; but he dreaded

nothing so much as the thought of being eaten by his cats when he should be dead. Though he constantly performed his devotions at stated hours, and read aloud; yet, when he was taken off the island, his language, from disuse of conversation, was become scarcely intelligible.

In this solitude he continued four years and four months; during which time only two incidents happened which he thought worth relating, the occurrences of every day being in his circumstances nearly similar. The one was, that pursuing a goat eagerly, he caught it just on the edge of a precipice, which was covered with bushes, so that he did not perceive it, and he fell over to the bottom, where he lay (according to captain Rogers's account) twenty-four hours senseless; but, as he related it to Sir R. Steele, he computed, by the alteration of the moon, that he had lain three days. When he came to himself he found the goat lying under him dead. It was with great difficulty that he could crawl to his habitation, whence he was unable to stir for ten days, and did not recover of his bruises for a long time. The other event was the arrival of a ship, which he at first supposed to be French; and such is the natural love of society in the human mind, that he was eager to abandon his solitary felicity, and surrender himself to them, although enemies; but upon their landing, approaching them, he found them to be Spaniards, of whom he had too great a dread to trust himself in their hands. They were by this time so near that it acquired all his agility to escape, which he effected by climbing into a thick tree, being shot at several times as he ran off. Fortunately the Spaniards did not discover him, though they stayed some time under the tree where he was hid, and killed some goats just by. In this solitude Selkirk remained until the 2d of February 1709, when he saw two ships come into the bay, and knew them to be English. He immediately lighted a fire as a signal; and, on their coming on shore, found they were the Duke, captain Rogers, and the Duchess, captain Courtney, two privateers from Bristol. He gave them the best entertainment he could afford; and, as they had been a long time at sea without fresh provisions, his goats were highly acceptable. His habitation, consisting of two huts, one to sleep in, the other to dress his food in, was so obscurely situated, and so difficult of access, that only one of the ship's officers would accompany him to it. Dampier, who was pilot on board the Duke, and knew Selkirk very well, told captain Rogers that, when on board the Cinque Ports, he was the best seaman on board that vessel; upon which captain Rogers appointed him master's mate of the Duke. After a fortnight's stay at Juan Fernandez, the ships proceeded on their cruise against the Spaniards; plundered a town on the coast of Peru; took a Mauilla ship off California, and returned by way of the East Indies to England, where they arrived the 1st of October 1711, Selkirk having been absent eight years, more than half of which he had spent alone in the island. Captain Cook remarks, as an extraordinary circumstance, his keeping an account of the days of the week and month; but this might be done, as Defoe makes Robinson

Crusoe do, by cutting notches in a post, or many other methods. A story was raised and propagated by Daniel Defoe's malignant enemies, that Selkirk put his papers into Defoe's hands, to arrange and form them into a regular narrative, and that from these papers he formed his celebrated Adventures of Robinson Crusoe. But, not to mention that Selkirk had no means of writing a journal whilst he was upon the island, so dishonest an action does not correspond with Defoe's general character. We therefore refer our readers, for what appears to us to be the truth to our article *Defoe*. Of the time, or place, or manner of this extraordinary man's death we have no account; but in 1792 the chest and musket which Selkirk had with him on the island were in the possession of his grand-nephew, John Selkirk weaver of Largo, in Scotland.

**SELKIRK**, the capital of Selkirkshire, is a small town pleasantly situated on a rising ground, and enjoys an extensive prospect in all directions, especially up and down the Etterick. It was a royal borough, and joined with Lamark, Linlithgow, and Peebles, in sending a member to the British parliament. It is governed by two bailies, a dean of guild, treasurer, and ten counsellors. The citizens were anciently famous for their valor. Of 100, who followed James IV. to the fatal battle of Floddon, in 1513, a few returned with trophies of victory, some of which are still preserved, and the sword of William Brydon, the town clerk, who commanded them. The English, provoked with their desperate valor, burned their town; but James V. rewarded them by a grant of the wood and ground of an extensive tract of Etterick forest. It has manufactures of boots, shoes, and inkle. The town, till of late, was but poorly built, but lately it has been greatly improved; the streets have been levelled and paved, the old gaol, and another house which stood in the middle of the street have been removed, and many new houses have been built in a good style, together with a new town house, containing apartments for the town and sheriff's court and a library; it has a handsome spire and clock. A new prison has also been erected at the back of the town, with a spacious area, enclosed with a wall, for the use of the prisoners. It has fairs March 25th, April 15th, August 10th, October 20th, and December 8th, O. S. It is thirty miles south-east of Edinburgh, and thirty south-west of Berwick.

**SELKIRK, or SELKIRKSHIRE**, called also the sheriffdom of Etterick Forest, a county of Scotland, extending about twenty-four miles in length from east to west, and from eight to fifteen in breadth from south to north. It is bounded on the north by Peebles-shire; east by Berwickshire; south-east and south by Roxburghshire; south-west by Dumfries-shire; and west by Peebles-shire. This county was formerly reserved by the Scottish princes for the pleasure of the chase, and they had houses for the reception of their train. At that time the face of the country was covered with woods, in which there were great numbers of red and fallow deer, whence it had the name of Etterick Forest. The woods, however, are now almost entirely cut down, and the county is chiefly supported by the breed of

sheep. They are generally sold into England, but sometimes into the Highlands, in March, where they are kept during summer; and, after being improved by the mountain grass, are returned into the Lowlands in the beginning of winter. This county, though not very populous at present, was once the nurse of heroes, who were justly accounted the bulwark of their native soil, being ever ready to brave danger and death in its defence. Of this we have a memorable proof in the pathetic lamentations of their wives and daughters for the disaster of the field of Floddon, 'where their brave foresters were a' wed away.'

The rivers Etterick and Yarrow unite a little above the town of Selkirk, and terminate in the Tweed. For five miles above its junction with Etterick, the Tweed is still adorned with woods, and leads the pleased imagination to contemplate what this country must have been in former times. The Yarrow, for about five miles above its junction with the Etterick, exhibits nature in a bold and striking aspect. Its native woods still remain, through which the stream has cut its turbid course, deeply engulfed amidst rugged rocks. Here in a flood stood the descriptive Thomson when he saw it

Work and boil, and foam and thunder through.

Upon a peninsula, cut out by the surrounding stream, in the middle of this fantastically wild scene of grandeur and beauty, stands the castle of Newark.

**SELL, v. a. & v. n.** { Sax. *rýllan*; Island.

**SELLER, n. s.** { *sela*. To give for a price; the word correlative to buy; to vend; to have traffic: a seller is a vender.

The Midianites *sold* him into Egypt, unto Potiphar. *Genesis.*

Let us *sell* him to the Ishmaelites.

*Id. xxxvii. 27.*

Consult not with a buyer of *selling*.

*Eccles. xxxvii. 11.*

You would have *sold* your king to slaughter,  
His princes and his peers to servitude. *Shakspeare.*

I will buy with you, *sell* with you; but I will not eat with you. *Id. Merchant of Venice.*

To things of sale a *seller's* praise belongs.

*Shakspeare.*

This sense is likewise mistress of an art,  
Which to soft people sweet perfumes doth *sell*.

*Davies.*

All the inns and public houses are obliged to furnish themselves with corn, which is *sold* out at a much dearer rate than 'tis bought up.

*Addison on Italy.*

The name of the agent, or the *seller*, notary, and witnesses, are in both instruments. *Id.*

You have made an order that ale should be *sold* for three halpenice a quart. *Swift.*

**SELLIUS** (Godfrey), F. R. S., a learned historian and naturalist, born at Dantzig. He resided chiefly in France. He wrote 1. A Voyage to Hudson's Bay; 2. A Dictionary of Monograms; 3. The Natural History of Ireland; 4. History of the Ancient Revolutions of the Globe. He died in France in 1767.

**SELTZER WATER**, a mineral water which springs up at Lower Seltzer, is very useful medicinally. It contains, according to some, a very small portion of calcareous earth, of a native mineral alkali, and an acid; but of these the

quantity is too small to attribute any medicinal virtues to; but it contains also nearly one-seventh of its bulk of fixed air, which is more than is found in any other mineral water, and to this it owes its principal virtues. Others have said that it is of the same nature with Pyrmont water (see MINERAL WATERS), and contains a subtile aqueous fluid, a volatile iron, and a predominant alkali, all joined together into one brisk spirituous water. The consequence of these different opinions respecting its constituent parts is that different methods have been recommended for imitating it.

From the experiments of Dr. Brocklesby on Seltzer water we learn that, upon dropping twelve drops of very highly colored syrup of violets into a wine-glass of it, the syrup seemed first to manifest a purple hue, but, upon their intimate union, the whole changed into a beautiful green: that the same quantity of oil of tartar per deliquium dropped into a glass of sparkling, fresh, clear water, quickly turned the whole milky, and, after standing, a fine pearl-colored powder fell to the sides and bottom of the glass; on adding an equal number of drops of pure dephlegmated spirit of vitriol to a glass of this water, a light cloud was seen suspended towards the middle of the glass, and numerous air-bubbles rose from all parts of the water, and the sparkling might be renewed by adding one or more drops of the acid, and shaking the glass; and the like ebullition was more readily produced by a solution of sugar and Rhenish wine, or vinegar with the same: and the same appearances were exhibited by dropping any vegetable or mineral acids into this water, as are observed when alkalies and acids are mixed together: a volatile caustic alkali, in half an hour after it had been dropped into this water, produced at first a cloud and afterwards a precipitation. Lixivium saponarium so far decomposed a glass of Seltzer water, that a cloud instantly appeared in the middle of it, and the air-bubbles, emerging from the lower part of it, were greedily absorbed by the caustic alkali, which is known to imbibe fixed air, whenever it comes into contact with it. This water, says Dr. Brocklesby, poured into a glass, separates more air-bubbles than any other water which he had tried, and continues longer to do so in the open air; but its sparkling may be renewed by adding any sub-acid vegetable, and a little sugar, as sharp cyder and Rhenish wine and sugar; but he adds that the best Seltzer water here will not perfectly curdle milk, nor lather with soap, and that with powder of gall-nuts no farther change of color appeared than in pure water. By evaporating twenty-four ounces of the best Seltzer water, he obtained thirty-six grains of a saline residuum; and the greatest quantity he could ever get from a pint, wine measure, was less than thirty grains. Ten drops of strong spirits of vitriol, poured on as many grains of salt of Seltzer water, caused great and instant ebullition, and suffocating steam, which tinged blackish a silver spoon held in them, and gave to its polished surface a bitter taste.

Having dissolved sixty-six grains of pure white salt, obtained from this water, in distilled water, and filtrated it, he thereby obtained seven

grains of a calcareous earth, perfectly soluble in all weak acids; but by several different modes of trial he was led to conclude that this water contains no ferruginous principle.

Finding that the salts and earths contained in Seltzer water are too inconsiderable, both in quantity and quality, to promise any very material medicinal effects, he proceeded to investigate what might be ascribed to the great quantity of fixed air which this water constantly discharges, in a heat not exceeding that of the human body; and the result was, that the factitious air, yielded by a bottle full of water, containing exactly fourteen ounces seven drachms, in a heat never exceeding  $116^{\circ}$  by Fahrenheit's scale, amounted to a quantity which occupied a space that required two ounces two and a half drachms of water to fill it; or, allowing 265 grains of common water for a cubic inch, the whole water amounted to twenty-seven cubic inches, and that which would fill the space occupied by the air four ounces and one-fifth; and so large a quantity of interstitial air, he says, was generated in a heat not incompatible with life in any part of the world, as the

ver heats in all climates testify, and less than the heat which is often experienced without instantaneous prejudice, in some tropical climates. However, this generated air soon began to be re-absorbed into the body of the water, and, in about eight hours, the space occupied by the remaining air did not exceed one-fifth of what it had formerly done. From another experiment with the salt of Seltzer water, he found that this seemed to have let go much the greatest part of its fixed air, and probably thereby lost most of the virtues inherent in the pure fresh water itself.

From such experiments Dr. Brocklesby infers that Seltzer mineral water contains, besides the mere elementary water, a very small quantity of calcareous earth, and a much greater portion of a native mineral alkali, together with some acid retained a while within the water, but which either evaporates into the open air, or else is soon combined with the mineral alkali: and he thinks it probable that the active virtues of this water depend more on this elastic matter, or fixed air, which it contains in such uncommon abundance beyond other mineral waters, than in any combination of its saline and earthy contents, which are found in such small quantities as to be incapable of any material service, though this water is known to be exceedingly beneficial. This account of the analysis of Seltzer water is closed with the history of some medical cases, in which the use of this water completed a cure, after a great variety of other remedies had proved insufficient.

The operation of this water, according to Hoffman, is chiefly by urine, for it has no purgative virtues. It corrects acidities, renders the blood and juices more fluid, and promotes a brisk and free circulation; and, therefore, it is good in obstructions of the glands, and against gross and viscid humors. It is of great use in the gravel and stone, and other disorders of the kidneys and bladder. It is also excellent in gouty and rheumatic complaints, especially when mixed with milk, or improved by the addition of Rhenish wine and a little sugar. It is drunk with great success in scorbutic, cutaneous, and

putrid disorders. It relieves the heart-burn, and is an excellent stomachic. On account of its diuretic quality, it is serviceable in dropsical complaints: and, mixed with asses' milk, it is much recommended in consumptive cases, and in disorders of the lungs; with or without milk, it is in great esteem in nervous disorders, and also in hypocondriacal and hysterical complaints, and in obstructions of the menses, accompanying the use of it with proper exercise. It is also administered with success in purging and fluxes arising from acidity in the bowels; and, it is said, if drunk by nurses, to render their milk more wholesome and nourishing, and to prevent it from turning sour on the stomachs of children. See London Med. Observ. vol. iv. p. 7, &c., and our own article MINERAL WATERS.

According to the former analysis, artificial Seltzer water may be prepared by adding one scruple of magnesia alba, six scruples of fossil alkali, and four scruples of common salt, to each gallon of water, and saturating the water with fixed air or carbuncle acid. According to the latter it may be imitated by adding to a quart of the purest and lightest water thirty drops of a strong solution of iron made in spirit of salt, a drachm of oil of tartar per deliquium, and thirty drops of spirit of vitriol, or a little more or less as is found necessary, not to let the alkali of the oil of tartar prevail too strongly, though it must prevail a little. If the proportions be carefully observed, and the whole of these ingredients shaken briskly together, the artificial Seltzer or Pyrmont water thus made will strongly resemble the natural, and have the same good effect in medicine. But, as fixed air is the only efficacious medicinal part of the composition of Seltzer water, the best method of imitating it is by impregnating common water with that acid by a process for which we are indebted to Dr. Priestley. In 1767, having placed shallow vessels of water within the region of fixed air, on the surface of the fermenting vessels of a brewery, and left them all night in that situation, he found that the water had acquired a very sensible and pleasant impregnation. He proceeded to accelerate the impregnation by pouring the water from one vessel into another, while they were both held within the sphere of the fixed air. The method of effecting this by air dislodged from chalk and other calcareous substances did not occur to him till 1772, when he published his directions for this purpose, together with a drawing of the necessary apparatus, which he had before communicated to the board of admiralty. That apparatus afterwards gave way to another, invented by Dr. Nooth.

Dr. Withering of Birmingham after this contrived a new apparatus for impregnating water with fixed air, which, he says, is preferable to that in common use, because it can be made at less expense, and is more easily prepared; because the whole quantity of fixable air produced is converted to use without any waste of the vitriolic acid; because it impregnates three times the quantity of water at one time, more completely, and with less trouble; and the impregnated water will always retain its virtue, if the joints and cocks of the machine are perfectly

air-tight; for which purpose they should once a-year be supplied with a small quantity of un-salted lard.

**SEL'VAGE, n. s.** Of this word I know not the etymology, says Johnson. Skinner thinks selavage is said as salvage, from its saving the cloth. Mr. Thomson says, Belg. *zelfigg*, or *zulvog* from *zel*, a cord, and *voge*, a joining. The edge of cloth where it is closed by complicating the threads.

Make loops of blue upon the edge of the one curtain from the *salvage* in the coupling. *Ex. xxvi. 4.*

**SEMAYLA**, a gold mine of Bamboek, in Central Africa. It is situated in a hillock about 200 feet high, and 5000 in circumference. The gold is contained in a kind of reddish sandstone, extremely hard, mixed with a species of calcareous emery, and very hard red marble. At the depth of about thirty feet, the miners find a solid stratum of red marble, richly impregnated with gold, upon which their skill does not enable them to make any impression. The difficulties in working cause the mine of Semayla, though the richest in Bamboek, to be considered only of secondary value.

**SEM'BLE, v. n.**

Lat.

**SEM'BLABLE, adj.**

To represent

**SEM'BLABLY, adv.**

{ sent; make a like-

**SEM'BLANCE, n. s.**

{ ness; semblable is,

**SEM'BLANT, adj. & n. s.**

| like, the adverb cor-

**SEM'BLATIVE, adj.**

| responding; sem-

blance is, likeness; similitude; semblant, resembling; show; figure; semblative, suitable; fit; resembling.

Her purpose was not such as she did feign,  
Ne yet her person such as it was seen;  
But under simple show, and *semblant* plain,  
Jarks false Duesa, secretly unseen.

*Faerie Queene.*

Full lively is the *semblant*, though the substance dead. *Spenser.*

Be you the soldier, for you likest are,  
For manly *semblance*, and for skill in war. *Id.*

Then be abhorred

All feasts, societies, and throngs of men!  
His *semblable*, yea himself, Timon disdains.

*Shakespeare.*

A gallant knight he was, his name was Blunt;  
*Semblably* furnished like the king himself. *Id. Henry IV.*

Solicit Henry with her wondrous praise:  
Bethink thee on her virtues that surmount  
Her natural graces, that extinguish art:  
Repeat their *semblance* often. *Shakespeare.*

Diana's lip

Is not more smooth and ruby; thy small pipe  
Is as the maiden's organ shrill and sound;  
And all is *semblatice* a woman's part.

*Id. Twelfth Night.*

Their *semblance* kind, and mild their gestures  
were.

Peace in their hands, and friendship in their face. *Fairfax.*

He with high words, that bore

*Semblance* of worth, not substance, gently raised  
Their fainting courage, and dispelled their fears.

*Milton.*

With *semblable* reason we might expect a regularity in the winds. *Browne's Vulgar Errors.*

Thy picture, like thy fame,  
Entire may last; that, as their eyes survey  
The *semblant* shade, men yet unborn may say,

Thus great, thus gracious, looked Britannia's queen;  
Her brow thus smooth, her look was thus serene.

*Priar.*

Let Europe, saved, the column high erect,  
Than Trajan's higher, or than Antonine's,  
Where *semblung* art may carve the fair effect  
And full achievement of thy great designs. *Id.*

This last effort brought forth the opinion that these bodies are not what they seem to be; that they are no shells, but mere sportings of active nature, and only *semblances* or imitations of shells. *Woodward.*

If they (early impressions) will not bear this after hard rubbing, they must be dismissed, as no genuine principles of truth, but as counterfeits imposed upon us under guise and *semblance* of it. *Mason.*

It is not his meaning that we put on the outward face and *semblance* of virtue, only to conceal and disguise our vice. *Rogers.*

**SEMECARPUS**, in botany, a genus of the trigynia order, belonging to the pentandria class of plants: cor. quinquepetalous; the drupa is heart-shaped, cellulous, and monospermous. There is but one species.

**SEMELE**, in mythology, the daughter of Cadmus by Hermione, the daughter of Mars and Venus. She was beloved by Jupiter, and had received his visits. Juno, becoming jealous, visited her in the form of her nurse Beroe, and advised her to ask Jupiter next time he should visit her to honor her by coming in all his glory, as he visited Juno. Semele, having obtained his promise of whatever she should ask, confirmed by Styx, made her request. The god of thunder was thunder-struck; but being bound by oath was obliged to comply, and Semele perished in celestial fire. But being six months gone with child of Bacchus, the child was preserved, and sewed up for other three months in Jupiter's thigh; during which period the god is said to have limped, as the votaries of Bacchus have often done since. But when Bacchus grew up, and visited the infernal regions, he was permitted to bring back his mother to life again. She was worshipped under the name of Thyone, at Braeze in Laconia, which she had visited with her son. See **BACCHUS**, **MYSTERIES**, and **MYTHOLOGY**.

**SEmen**, in botany, seed. See **BOTANY**, Index. With respect to number, plants are either furnished with one seed, as sea-pink and bistort; two, as wood-roof and the umbelliferous plants; three, as spurge; four, as the lip-flowers of Tournefort and rough-leaved plants of Ray; or many, as ranunculus, anemone, and poppy. The form of seeds is likewise extremely various, being large or small, round, oval, heart-shaped, kidney-shaped, angular, prickly, rough, hairy, wrinkled, sleek or shining, black, white, or brown. Most seeds have only one cell or internal cavity; those of lesser burdock, valerian, lamb's lettuce, cornelian cherry, and sebesten, have two. With respect to substance, seeds are either soft, meperianaceous, or of a hard bony substance; as in gromwell, tamarind, and all the nuciferous plants. In point of magnitude, seeds are either very large, as in the cocoa-nut; or very small, as in campanula, ammannia, and throat-wort. With respect to situation they are either dis-

persed promiscuously through the pulp (semina midulantia), as in water-lily; affixed to a suture or joining of the valves of the seed-vessel, as in the cross-shaped and pea-bloom flowers; or placed upon a placenta or receptacle within the seed vessel, as in tobacco and thorn-apple. Seeds are said to be naked (semina nuda) which are not contained in a cover or vessel; such are those of the lip and compound flowers, the umbelliferous and rough-leaved plants; covered seeds (semina testa) are contained in some vessel, whether of the capsule, pod, berry, apple, or cherry kind. A simple seed is such as bears neither crown, wing, nor downy pappus; the varieties in seeds, arising from these circumstances, are particularly enumerated under their respective heads. In assimilating the animal and vegetable kingdoms, Linnæus denominates seeds the eggs of plants. The fecundity of plants is frequently marvellous; from a single plant or stalk of Indian Turkey wheat, are produced, in one summer, 2000 seeds; of elecampane 3000; of sun-flower 4000; of poppy 32,000; of a spike of cat's tail 10,000 and upwards; a single fruit, or seed vessel of tobacco, contains 1000 seeds; that of white poppy 8000. Mr. Ray relates, from experiments made by himself, that 1012 tobacco-seeds are equal in weight to one grain; and that the weight of the whole quantum of seeds in a single tobacco plant is such as must, according to the above proportion, determine their number to be 360,000. The same author estimates the annual produce of a single stalk of spleen-wort to be upwards of 1,000,000 of seeds. The dissemination of plants respects the different methods or vehicles by which nature has contrived to disperse their seeds for the purpose of increase. These by naturalists generally reckoned four:—1. Rivers and running waters. 2. The wind. 3. Animals. 4. An elastic spring, peculiar to the seeds themselves. 1. The seeds which are carried along by rivers and torrents are frequently conveyed many hundreds of leagues from their native soil, and cast upon a very different climate, to which, however, by degrees, they render themselves familiar. 2. Those which are carried by the wind are either winged, as in fir-tree, trumpet-flower, tulip-tree, birch, arbor-vitæ, meadow rue, and Jessamine, and some umbelliferous plants; furnished with a pappus, or downy crown, as in valerian, poplar, reed, succulent swallow-wort, cotton-tree, and many of the compound flowers; placed within a winged calyx or seed-vessel, as in seabious, sea-pink, dock, dioscorea, ash, maple, and elm-trees, logwood and woad; or, lastly, contained within a swelled calyx or seed-vessel, as in winter-cherry, cucubalus, melilot, bladder-nut, fumitory, bladder-sena, heart seed, and chick-peas. 3. Many birds swallow the seeds of vanelloe, juniper, mistletoe, oats, millet, and other grasses, and void them entire. Squirrels, rats, parrots, and other animals, suffer many of the seeds which they devour to escape, and thus in effect disseminate them. Moles, ants, earth-worms, and other insects, by ploughing up the earth, admit a free passage to those seeds which have been scattered upon its surface. Again, some seeds attach themselves to animals, by means of hooks, crotchetts, or hairs, which are

either affixed to the seeds themselves, as hound's tongue, mouse-ear, vervain, carrot, bastard parsley, sanicle, water hemp-agrimony, arctopus and verbesina; to their calyx, as in burdock, agrimony, rhexia, small wild bugloss, dock, nettle, pellitory, and lead-wort; or to their fruit or seed-vessel, as in liquorice, enchanter's nightshade, cross-wort, clivers, French honey-suckle, and arrow-headed grass. 4. The seeds which disperse themselves by an elastic force have that force resident either in their calyx, as in oats and the greater number of ferns; in their pappus, as in centaurea erupina; or in their capsule, as in geranium, herb-bennet, African spinea, fraxinella, horse-tail, balsam, Malabar nut, cucumber, claterium, and male balsam-apple.

**SEMIN.** in the animal economy. See ANATOMY, MIDWIFERY, and PHYSIOLOGY.

**SEMENDRIA**, a town of Servia in the north-west of European Turkey, situated on the south side of the Danube. It is defended by an old castle, and was, in remote times, the residence of the kings of Servia. It has been repeatedly taken and retaken by the Turks and their opponents, viz. in 1683 by the Hungarians; in 1690 by the Turks; and again by the Hungarians in 1718, after which it was ceded to the Turks. Inhabitants 9000. Twenty miles south-east of Belgrade, and fifty south of Temesvar.

**SEMENTINÆ FERIE**, in antiquity, feasts held annually among the Romans, to obtain of the gods a plentiful harvest. They were celebrated in the temple of Tellus, where solemn sacrifices were offered to Tellus and Ceres. These feasts were held about seed-time, usually in the month of January; for, as Macrobius observes, they were moveable feasts.

**SEMI ARIANS**, in ecclesiastical history, a branch of the ancient Arians, consisting, according to Epiphanes, of such as, in appearance, condemned the errors of that heresiarch, but yet acquiesced in some of the principles thereof, only palliating and hiding them under softer and more moderate terms. Though they separated from the Arian faction (see ARIANS), they could never be brought to acknowledge that the Son was *'ομοστος*, that is, consubstantial, or of the same substance with the Father; they would only allow him to be *'ομοιοστος*, that is, of a like substance with the Father, or similar to the Father in his essence, not by nature, but by a peculiar privilege. The semi-arianism of the moderns consists in their maintaining that the Son was from all eternity begotten by the will of the Father, contrary to the doctrine of the orthodox, who seem to teach that the eternal generation is necessary. Such at least are the respective opinions of Dr. Clarke and bishop Bull. See THEOLOGY.

**SEMIAN'NULAR, adj.** Lat. *semi* and *anulus*, a ring. Half round.

Another boar tusk, somewhat slenderer, and of a semiannular figure. *Grew's Museum.*

**SEMIBREF, n. s.** Fr. *semibreve*.

He takes my hand, and as a still which stays  
A *semibref* 'twixt each drop, heiggardly,  
As loth to enrich me, so tells many a lie. *Donee.*  
*Semibref* is a note in musick relating to time, and

is the last in augmentation. It is commonly called the master-note, or measure-note, or time-note, as being of a certain determinate measure or length of time by itself; and all the other notes of augmentation and diminution are adjusted to its value.

*Harris.*

SEMICIRCLE, *n. s.* Lat. *semicirculus*, semi and circle. A half round; part of a circle divided by the diameter.

*Black brows*

Become some women best, so they be in a *semicircle*. Or a half moon, made with a pen. *Shakespeare.*

The firm fixture of thy foot would give an excellent motion to thy gait in a *semicircled* farthingale. *Id.*

The rainbow is caused by the rays of the sun falling upon a rorid and opposite cloud, whereof some reflected, others refracted, beget the *semicircular* variety we call the rainbow. *Browne's Vulgar Errors.*

The seas are inclosed between the two *semicircular* moles that surround it. *Addison on Italy.*

The chains that held my left leg gave me the liberty of walking backwards and forwards in a *semicircle*. *Swift.*

SEMICOLON, in grammar, is one of the points or stops used to distinguish the several members of a sentence from each other. The semicolon has its name as being of somewhat less effect than a colon; or as demanding a shorter pause. The proper use of the semicolon is to distinguish the conjunct members of a sentence, i. e. such as contain at least two simple members. Whenever, then, a sentence can be divided into two several members of the same degree, which are again divisible into other simple members, the former are to be separated by a semicolon. For instance: ‘If fortune bear great sway overhim, who has nicely stated and concercted every circumstance of an affair; we must not commit every thing, without reserve, to fortune, lest she have too great a hold of us.’ But though the proper use of the semicolon be to distinguish conjunct members, it is not necessary that all the members divided hereby be conjunct. For, upon dividing a sentence into great and equal parts, if one of them be conjunct, all those other parts of the same degree are to be distinguished by a semicolon. Sometimes also members that are opposite to each other, but relate to the same verb, are separated by a semicolon. Thus Cicero:—Ex hac parte pudor, illinc petulantia; hinc fides, illinc fraudatio; hinc pietas, illinc scelus, &c. To this likewise may be referred such sentences, where, the whole going before, the parts follow: as, ‘The parts of oratory are four; invention, disposition, elocution, and pronunciation.’

SEMICUBIUM, in medicine, a half bath, wherein the patient is only placed up to the navel.

SEMIIDIAMETER, *n. s.* Semi and diameter. Half the line which, drawn through the centre of a circle, divides it into two equal parts; a straight line drawn from the circumference to the centre of a circle.

The force of this instrument consists in the disproportion of distance betwixt the *semidiometer* of the cylinder and the *semidiometer* of the rundle with the spokes. *Wilkins.*

Their difference is as little considerable as a *semidiometer* of the earth in two measures of the highest heaven, the one taken from the surface of the earth,

the other from its centre: the disproportion is just nothing. *More.*

SEMIIDIAPHANEITY, *n. s.* Lat. *semi* and *diaphancy*. Half transparency; imperfect transparency.

The transparency or *semidiaphaneity* of the superficial corpuscles of bigger bodies may have an interest in the production of their colors. *Boyle on Colours.*

Another plate, finely variegated with a *semidiaphaneous* grey or sky, yellow and brown.

*Woodward on Fossils.*

SEMIFLUID, *n. s. & adj.* Semi and fluid. Imperfectly fluid.

Phlegm, or pituite, is a sort of *semifluid*; it being so far solid that one part draws along several other parts adhering to it, which doth not happen in a perfect fluid; and yet no part will draw the whole mass, as happens in a perfect solid. *Arbuthnot.*

SEMILU'NAR, *adj.* } Fr. *semilunaire*; Lat. SEMI LU'NARY. } *semi* and *luna*. Resembling in form a half moon.

The eyes are guarded with a *semilunar* ridge.

*i / t C* *Grew.*

SEMI METAL, *n. s.* Semi and metal. Half metal; imperfect metal.

*Seminets* are metallic fossils, heavy, opaque, of a bright glittering surface, not malleable under the hammer; as quicksilver, antimony, cobalt, the arsenicks, bismuth, zink, with its ore calamine: to these may be added the semimetallic recrements, tutty and pampholyx. *Hill.*

SEMINAL, *adj.* } Fr. *seminal*; Lat. *seminalis*.

SEMINALITY, *n. s.* Belonging to seed; contained in the seed; radical: the adverb corresponding: *seminary* is strictly a seedplot; place where any thing is sown to be transplanted; seminal state; principle; causality; breeding place; place of education: *semination* is the act of sowing: *semifinic* and *seminifical* is productive of seed.

It was the seat of the greatest monarchy, and the *seminary* of the greatest men of the world, whilst it was heathen. *Bacon.*

Nothing subministrates apter matter to be converted into pestilent *seminaries* sooner than steams of nasty folks and beggars. *Harvey on the Plague.*

*Seminification* is the propagation from the seed or seminal parts. *Hale's Origin of Mankind.*

Had our senses never presented us with those obvious *seminal* principles of apparent generations we should never have suspected that a plant or animal would have proceeded from such unlikely materials. *Glanville's Scepsis.*

As though there were a *seminality* in urine, or that, like the seed, it carried with it the idea of every part, they conceive we behold therein the anatomy of every particle. *Browne.*

The hand of God, who first created the earth, hath wisely contrived them in their proper *seminaries*, and where they best maintain the intention of their species. *Id.*

We are made to believe that in the fourteenth year males are *seminalical* and pubescent; but he that shall inquire into the generality will rather adhere unto Aristotle.

Some, at the first transplanting trees out of their *seminaries*, cut them off about an inch from the ground, and plant them like quickset.

*Mortimer's Husbandry.*

This stratum is expanded, serving for a common

integument, and being the *seminary* or promptuary that furnisheth forth matter for the formation and increment of animal and vegetable bodies. *Woodward.*

Though we cannot prolong the period of a commonwealth beyond the decree of heaven, or the date of its nature, any more than human life beyond the strength of the *seminal* virtue, yet we may manage a sickly constitution, and preserve a strong one. *Swift.*

The inns of court must be the worst instituted seminaries in any Christian country. *Id.*

**SEMINARY**, in Catholic countries, is particularly used for a kind of college or school, where youth are instructed in the ceremonies, &c., of the sacred ministry. Of these there are great numbers; it being ordained by the council of Trent that there be a seminary belonging to each cathedral under the direction of the bishop.

**SEMIOPA'COUS**, *adj.* Lat. *semi* and *opus*. Half dark.

*Semiopacous* bodies are such as, looked upon in an ordinary light, and not held betwixt it and the eye, are not wont to be discriminated from the rest of opacious bodies. *Boyle.*

**SEMPALATNOI**, a fortress of Asiatic Russia, in the government of Tomsk, built in 1718, with a view of protecting the trade there carried on with the Calmucs and Bucharians. But as the current of the Irtysch, on whose banks it was situated, continually carried away the adjacent ground, it was successively removed to different spots, and is now in its fourth position; the river is here so shallow, and so obstructed, that it has been found impossible to make a passage to the fort. The rendezvous, therefore, made for the purpose of trade with the Kirghisian and Buchananian caravans, has been fixed about ten miles below. The principal fortress forms a square, composed of wooden ramparts, and surrounded by a ditch: two villages stand, one above, and the other below, both palisaded like the fort, and containing about 200 houses. The most profitable trade carried on is with the Kirghises, who give their horses and cattle at a very cheap rate, for mere toys and trifles. It is also frequented by traders from Taschkent and Little Bucharia, who bring chiefly inferior cotton goods. The name of Semipalatnoi, which signifies the Seven Palaces, is derived from some ruins situated in the neighbourhood. Long.  $80^{\circ} 10' E.$ , lat.  $50^{\circ} 29' 45'' N.$

**SEMPALMATI**, in ornithology, a subdivision of the order of palmipedes, in Mr. Latham's system, comprehending birds that have only half-webbed feet. See *PALMIPEDES*.

**SEMIPELAGIANS**, in ecclesiastical history, a name anciently, and even at this day, given to such as retain some tincture of Pelagianism. See *PELAGIANS*. Cassian, who had been a deacon of Constantinople, and was afterwards a priest of Marseilles, was the chief of these Semipelagians; whose leading principles were, 1. That God did not dispense his grace to one more than another in consequence of predestination, i. e. an eternal and absolute decree, but was willing to save all men, if they complied with the terms of his gospel. 2. That Christ died for all men. 3. That the grace purchased by Christ, and necessary to salvation, was offered to all men. 4. That man, before he received grace, was capable of faith and holy desires. 5. That man was

born free, and was consequently capable of resisting the influences of grace, or of complying with its suggestion. The Semipelagians were very numerous; and the doctrine of Cassian, though variously explained, was received in the greatest part of the monastic schools in Gaul, whence it spread itself far and wide through the European provinces. As to the Greeks and other eastern Christians, they had embraced the Semipelagian doctrines before Cassian, and still adhere to them. In the sixth century, the controversy between the Semipelagians and the disciples of Augustin prevailed much, and continued to divide the western churches.

**SEMIPELLU'CID**, *adj.* Lat. *semi* and *pellucidus*. Half clear; imperfectly transparent.

A light grey *semipellucid* flint, of much the same complexion with the common Indian agat. *Woodward.*

**SEMIPERSPIC'OUS**, *adj.* Lat. *semi* and *perspicuous*. Half transparent; imperfectly clear.

One entire massy stone, *semi perspicuous*, and of a pale blue, almost of the colour of some cows' horns. *Grew.*

**SEMIRAMIS**, in ancient and partly fabulous history, a celebrated queen of Assyria, daughter of the goddess Derceto by a young Assyrian. She was exposed in a desert; but her life was preserved by doves for one whole year, till Simmas, one of the shepherds of Ninus, found her and brought her up as her own child. Semiramis, when grown up, married Menones, the governor of Ninevel, and accompanied him to the siege of Bactria: where, by her advice and prudent directions, she hastened the king's operations, and took the city. These eminent services, together with her uncommon beauty, endeared her to Ninus. The monarch asked her of her husband, and offered him his daughter Sosana in her stead; but Menones, who tenderly loved Semiramis, refused; and, when Ninus had added threats to entreaties, he hanged himself. No sooner was Menones dead than Semiramis, who was of an aspiring soul, married Ninus, by whom she had a son called Ninyas. Ninus was so fond of Semiramis that at her request he resigned the crown, and commanded her to be proclaimed queen and sole empress of Assyria. Of this, however, he had cause to repent: Semiramis put him to death, to establish herself on the throne; and, when she had no enemies to fear at home, she began to repair the capital of her empire, and by her means Babylon became the most superb and magnificent city in the world. She visited every part of her dominions, and left every where immortal monuments of her greatness. To render the roads passable, and communication easy, she hollowed mountains and filled up valleys, and water was conveyed at a great expense by large and convenient aqueducts to barren deserts and unfruitful plains. She was not less distinguished as a warrior: many of the neighbouring nations were conquered. Semiramis has been accused of licentiousness; and some authors have observed that she regularly called the strongest and stoutest men in her army to her arms, and afterwards put them to death, that they might not be living witnesses of her incontinence. Her passion for her

son was also unnatural; and it was this criminal propensity which induced Ninjas to destroy his mother with his own hands. Mythologists say that Semiramis was changed into a dove after death, and received immortal honors in Assyria. It is supposed that she lived about eleven centuries before the Christian era, and that she died in the sixty-second year of her age and the twenty-fifth of her reign. Many fabulous reports have been propagated about Semiramis. See MYTHOLOGY.

SEMI-SPINALIS, in anatomy, the name of two muscles of the back. See ANATOMY, Index.

SEMITERTIAN, *n. s.* Semi and tertian. An ague compounded of a tertian and a quotidian.—Barley.

The natural product of such a cold moist year are tertians, *semiterrians*, and some quartans.

*Arbuthnot on Air.*

SEMVOW'EL, *n. s.* Semi and vowel. A consonant which makes an imperfect sound, or does not demand a total occlusion of the mouth.

When Homer would represent any agreeable object, he makes use of the smoothest vowels and most flowing semivowels.

*Broome.*

SEMLER (John Solomon), a Lutheran divine, was born in 1725, at Saalfeld in Saxony, and educated under professor Baumgarten at Halle. After quitting the university he resided some time at Saalfeld, whence in 1750 he removed to Coburg, to become editor of the Gazette. In 1751 he obtained the professorship of rhetoric and poetry at Altorf; and two years after that of theology at Halle, where he remained till his death, March 14th, 1791. Semler was one of those divines who, semi-infidel, explain away every thing miraculous in the Gospel history, and of whom Michaelis said, ‘Heretofore I was reckoned heterodox by my brethren, but now I am only too orthodox.’ The principal works of Semler are *Historica Ecclesiastica selecta Capita*, 1767—69, 3 vols., 8vo.; *An Introduction to Exegetical Theology*, 8vo.; *Apparatus ad libralem N. Test. Interpretationem*, 8vo.; *Apparatus ad lib. V. T. Interpretationem*, 8vo.; he also wrote the history of his own life, published at Halle, 1781, 2 vols. 8vo.

SEMLIN, a town in the frontier district near the confluence of the Save and the Danube, separated from Belgrade by the Save. It is the seat of an arch priest of the Greek church, and the residence of the Austrian commander. It is also the principal place for carrying on the transit trade between Turkey and Sclavonia. From the frequent prevalence of the plague, in the neighbourhood of Belgrade, great precautions are necessary to prevent the introduction of infection: all persons coming from Belgrade must undergo a quarantine here. A market is held daily in a meadow between the two towns, where two rows of palisades separate the dealers; sentinels are continually on the watch, to see that no hazardous communication takes place; and all the goods bought from the Turks must be exposed to the air, and fumigated. Inhabitants 3000.

SEMNONES, two ancient nations in Europe: one in Germany, inhabiting the banks of the

Elbe and the Oder; the other in Italy, on the borders of Umbria.

SEMONES, in the Roman mythology, inferior deities, who were not among the number of the twelve great gods. Among these were Janus, Faunus, Pan, Vertumnus, Priapus, Silenus, the Satyrs, and all the illustrious heroes who had received divine honors after death. The word is derived from *seini homines*, i. e. half men, because they were inferior to the gods, though superior to men.

SEMO SANCTUS, a deity of the Romans, one of those called Indigetes, or gods born in their country.

SEMPERVIVE, *n. s.* Lat. *semper* and *vivus*, always alive: A plant.

The greater *sempervive* will put out branches two or three years; but they wrap the root in an oil-cloth once in half a year.

*Bacon.*

SEMPERVIVUM, house-leek, in botany, a genus of the dodecagynia order, and dodecaandra class of plants: natural order thirteenth, succulente: c. l. divided into twelve parts; the petals are twelve, and the capsules twelve, containing many seeds. Linnaeus enumerates only eight species, but there are twelve, viz., *S. arachnoideum*, *arboreum*, *Canariense*, *glandulosum*, *globiferum*, *glutinosum*, *menanthes*, *montanum*, *sedeiforme*, *tectorum*, *tortuosum*, and *villosum*. Of these the

*S. tectorum* alone is a native of Britain. The stalk is about a foot high; the radical leaves are thick, oval, pointed, fringed, and spreading in a rose; those on the stem are imbricated and membranous: the flowers are pale red and sessile, and grow on curved terminal bunches. It is frequent on the tops of houses, and flowers in July. The species is thus described by Lewis: ‘The leaves of house-leek, of no remarkable smell, discover to the taste a mild subacid austerity: their expressed juice, of a pale yellowish hue, when filtered, yields on inspissation a deep yellow, tenacious, mucilaginous mass, considerably acidulous and acerb: whence it may be presumed that this herb has some claim to the refrigerant and Restricting virtues that have been ascribed to it. The filtered juice, on the addition of an equal quantity of the rectified spirit of wine, forms a light white coagulum, like cream of fine pomatum, of a weak but penetrating taste: this, freed from the fluid part, and exposed to the air, almost totally exhales. From this experiment it is concluded by some that house-leek contains a volatile alkaline salt: but the juice coagulates in the same manner with volatile alkalies themselves, as also with fixed alkalies: acids produce no coagulation.

SEMPITER'NAL, *adj.* Fr. *sempiternel*; Lat. *sempiternus*, from *semper* and *aeternus*. Eternal in futurity; having no end.

Those, though they suppose the world not to be eternal, à parte ante, are not contented to suppose it to be *sempiternal*, or eternal à parte post; but will carry up the creation of the world to an immense antiquity.

*Hale.*

The future eternity or *sempiternity* of the world being admitted, though the eternity à parte ante be denied, there will be a future infinity for the emanation of the divine goodness.

*Id.*

Should we the long-depend ing scale ascend  
Of sons and fathers, will it never end ?  
If 'twill, then must we through the order run  
To some one man whose being ne'er begun ;  
If that one man was *sempiternal*, why  
Did he, since independent, ever die ? *Blackmore.*

**SEMPRONIA**; 1. A Roman matron, mother of the Gracchi, celebrated for her learning as well as for her public and private virtues. See GRACCHUS and ROME. 2. Her daughter, who was married to Scipio Africanus, junior; but is accused of having admitted the triumvirs Carbo, Gracchus, and Flaccus to murder him. No pretence of patriotism can vindicate such crimes.

**SEMPRONIUS**, the family surname of the Gracchi. See GRACCHUS.

**SEM'STRESS**, *n. s.* Sax. *feameſtre*. A woman whose business is to sew; a woman who lives by her needle.

Two hundred *sem'stress* were employed to make me shirts, and linen for bed and table, which they were forced to quilt together in several folds.

*Gulliver's Travels.*

The tucked up *sem'stress* walks with hasty strides.

*Swift.*

**SEN'ATE**, *n. s.* Lat. *senatus*; Fr. *senat*. **SEN'ATE-HOUSE**, An assembly of counsellors; a body of men set apart to consult for the **SEN'ATOR**, **SEN'AT'RIAL**, *adj.* **SEN'ATORIAN**. public good: a senator is a member of a senate: senatorial, or senatorian, belonging to, or befitting, a senator.

We debase  
The nature of our seats, which will in time break ope  
The locks o' th' *senate*, and bring in the crows  
To peck the eagles. *Shakspeare. Coriolanus.*

Most unwise patricians,  
You grave but reckless *senators*. *Id.*

The nobles in great earnestness are going  
All to the *senate-house*; some news is come.

*Shakspeare.*

When Caesar would have discharged the *senate*, in regard of a dream of Calphurnia, this man told him he hoped he would not dismiss the *senate* till his wife had dreamed a better dream. *Bacon.*

He had not used excursions, spears, or darts,  
But counsel, order, and such aged arts;  
Which if our ancestors had not retained,  
The *senate's* name our council had not gained.

*Denham.*

There they shall found  
Their government, and their great *senate* chuse. *Milton.*

As if to every fop it might belong,  
Like *senators*, to censure right or wrong. *Granville.*

Gallus was welcomed to the sacred strand,  
The *senate* rising to salute their guest. *Dryden.*

A **SENATE** is an assembly of the principal inhabitants of a state, who have a share in the government.

**SENATE**, in the university of Cambridge, is equivalent to the convocation of Oxford, and consists of all masters of arts and higher graduates, being masters of arts who have each a voice in every public measure, in granting degrees, in electing members of parliament, a chancellor, &c. &c.

**SENATE, CONSERVATIVE**, in the last constitution of the ci-devant French republic, was a body of eighty men, who, for a short period, possessed the enormous power of nominating

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the whole legislative and executive rulers of the state, yet could not themselves hold any office in either branch of government. It was one of those political engines invented by Buonaparte and his junto, by which he so rapidly accumulated and concentrated the whole power of the republic in himself.

The **SENATE OF ANCIENT ROME** was of all others the most celebrated. It exercised no contentious jurisdiction; but appointed judges, either from among the senators or knights, to determine processes; it also appointed governors of provinces, and disposed of the revenues of the commonwealth, &c. Yet the whole sovereign power did not reside in the senate, since it could not elect magistrates, make laws, or decide of war and peace; in all which cases the senate was obliged to consult the people. The senate, when first instituted by Romulus, consisted of 100 members, to whom he afterwards added the same number, when the Sabines had migrated to Rome. Tarquin I. made the senate consist of 300, and this number remained fixed for a long time; but afterwards it fluctuated greatly, and was increased first to 700, and afterwards to 900, by Julius Cæsar, who filled the senate with men of every rank and order. Under Augustus the senators amounted to 1000, but this number was reduced, and fixed to 600. The place of a senator was bestowed upon merit; the kings had at first the privilege of choosing the members; and, after this expulsion, it was the right of the consuls, till the election of the censors, who from their office seemed most capable of making choice of men whose character was irreproachable, whose morals were pure, and relations honorable. Only particular families were admitted into the senate; and, when the plebeians were permitted to share the honors of the state, it was then required that they should be born of free citizens. It was also required that the candidates should be knights before their admission into the senate. They were to be above the age of twenty-five, and to have previously passed through the inferior offices of quæstor, tribune of the people, ædile, prætor, and consul. The senate always met on the 1st of January for the inauguration of the new consuls; and in all months, universally, there were three days, viz. the kalends, nones, and ides, on which it regularly met; but it met also on extraordinary occasions, when called together by a consul, tribune, or dictator. To render their decrees valid and authentic, a certain number of members was requisite, and such as were absent without some proper cause were fined. In the reign of Augustus 400 senators were requisite to make a senate. Nothing was transacted before sun-rise or after sun-set. In their office the senators were the guardians of religion, they disposed of the provinces, they prorogued the assemblies of the people, they appointed thanksgivings, nominated ambassadors, distributed the public money, and in short had the management of every thing political or civil in the republic, except the creating of magistrates, the enacting of laws, and the declarations of war and peace, which were confined to the assemblies of the people. The senate, as a body,

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were styled *Patres conscripti*, ‘conscript fathers.’ See *CONSCRIPT*. Their decrees were published in the name of *Senatus Populusque Romanus*, by contraction, *S. P. Q. R.*, i. e. the Senate and People of Rome. The tribunes of the people could stop their debates and decrees by the word *veto*. Their rank and authority were so great in the time of Pyrrhus that his minister Cineas declared them to be ‘a venerable assembly of kings.’ But under the emperors who succeeded Augustus they lost their importance, by flattering their vices. At last the senate was abolished by Justinian, thirteen centuries after its institution by Romulus.

A *SENATOR* is properly a member of some senate. The dignity of a Roman senator could not be supported without the possession of 80,000 sesterces, or about £7000 English money; and therefore such as squandered away their money, and reduced their fortune below this sum, were generally struck out of the list of senators. This regulation was not made in the first ages of the republic, when the Romans boasted of their poverty. The senators were not permitted to be of any trade or profession. They were distinguished from the rest of the people by their dress; they wore the laticlave, half boots of a black color, with a crescent or silver buckle in the form of a C; but this last honor was confined to the descendants of those hundred senators who had been elected by Romulus, as the letter C is a contraction for centum. See *SENATE*.

*SENATOR*, in British polity, is a member of either house of parliament. In the laws of king Edward the Confessor, we are told that the Britons called those senators whom the Saxons called afterwards aldermen and borough-masters, though not for their age but their wisdom; for some of them were young men, but very well skilled in the laws. Kenulph, king of the Mercians, granted a charter, which ran thus, viz.:—*Consilio et consensu episcoporum et senatorum gentis sue largitus fuit dicto monasterio, &c.*

*SENATUS ACADEMICUS*, the title assumed by the professors of the University of Edinburgh, as a learned body, in their diplomas, granted to students.

*SENATUS CONSULTUM* anciently made part of the Roman law. When any public matter was introduced into the senate, which was always called *referre ad senatum*, any senator whose opinion was asked was permitted to speak about it as long as he pleased, and on that account it was often usual for the senators to protract their speeches till it was too late to determine. When the question was put, they passed to the side of that speaker whose opinion they approved, and a majority of votes was easily collected, without the trouble of counting the numbers. When the majority was known, the matter was determined, and a *senatus consultum* was immediately written by the clerks of the house, at the feet of the chief magistrates, and it was signed by all the principal members of the house. When there was not a sufficient number of members to make a *senate*, the decision was called *senatus auctoritas*, but it was of no force if it did not afterwards pass into a *senatus consultum*. The sena-

tus consulta were at first in the custody of the kings, and afterward of the consuls, who could suppress or preserve them; but, about A. U. C. 304, they were always deposited in the temple of Ceres, and afterwards in the treasury, by the ediles of the people.

SEND, *v. a. & v. n.* { *Preterite and part.*

SEN'DER, *n.s.* { *pass. sent.* *Sax. pen-dan*; *Goth. senda*; *Belg. zenden*. To despatch persons or things from one place to another; transmit; dismiss; emit; let fly: as a verb active, to despatch a message; require by message: a sender is one who sends.

I pray thee *send* me good speed this day, and shew kindness unto my master. *Gen. xxiv. 12.*

This son of a murderer hath *sent* to take away my head. *Kings.*

I make a decree that all Israel go with thee; forasmuch as thou art *sent* of the king. *Ezra. vii. 14.*

He *sent* letters by post on horseback. *Esther.*

O *send* out thy light and thy truth; let them lead me. *Psalms.*

His citizens *sent* a message after him, saying, We will not have this man to reign over us. *Luke xix. 14.*

There have been commissions

*Send* down among them, which have flawed the heart Of all their loyalties. *Shakspeare. Henry VIII.*

I have made bold to *send* in to your wife: My suit is that she will to Desdemona Procure me some access. *Id. Othello.*

This was a merry message.

—We hope to make the *sender* blush at it.

*Id. Henry V.*

The water *sends* forth plants that have no roots, fixed in the bottom, being almost but leaves. *Bacon's Natural History.*

Go with me, some few of you, and see the place; and then you may *send* for your sick, which bring on land. *Bacon.*

They could not attempt their perfect reformation in church and state, till those votes were utterly abolished; therefore they *sent* the same day again to the king. *Clarendon.*

My overshadowing spirit and might with thee I *send* along. *Milton.*

But first, whom shall we *send*  
In search of this new world? Here he had need  
All circumspection, and we now no less  
Choice in our suffrage; for on whom we *send*

The weight of all and our last hope relies. *Id.*

Cherubic songs by night from neighbouring hills  
*Aërial music send.* *'Id.'*

Best with the best, the *sender*, not the *sent*. *Id.*

His wounded men he first *sends off* to shore. *Dryden.*

He *sent* for me; and, while I raised his head,  
He threw his aged arms about my neck,  
And, seeing that I wept, he pressed me close. *Id.*

The senses *send* in only the influxes of material things, and the imagination and memory present only their pictures or images, when the objects themselves are absent. *Cheyne.*

When the fury took her stand on high,  
A hiss from all the snaky tire went round:  
The dreadful signal all the rocks rebound,  
And through the' Achaian cities *send* the sound. *Pope.*

Servants, *sent* on messages, stay out somewhat longer than the message requires. *Swift.*

SENECA (*Marcus Annæus*), a celebrated orator, born at Corduba, in Spain, but descended

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of an equestrian Roman family, which had emigrated with the colony from Rome. He married Helvia, a Spanish lady, by whom he had three sons, Annæus Novatus, Lucius, the philosopher, and Annæus Mela, the father of the poet Lucan. He came to Rome with his family, where he became so eminent as an orator that he was styled declamator, or the rhetorician. He published a collection from the most celebrated orators of that age; part of which is extant, and printed under the title of *Suasoria et Controversiae; cum Declamationum excerptis.*

SENECA (Lucius Annæus), a celebrated Stoic philosopher, the second son of Marcus, born at Corduba, about the beginning of the Christian era. He was removed to Rome in his infancy, where he was educated in the most liberal manner, under the best masters. He learned eloquence from his father; but, his genius rather leading him to philosophy, he put himself under the Stoics Attalus, Sotion, and Papirius Fabianus; three celebrated philosophers, of whom he has made honorable mention in his writings. He also travelled when he was young, as in his *Quæstiones Naturales* he makes very exact and curious observations upon Egypt and the Nile. But this, though agreeable to his own humor, did not at all correspond with that plan of life which his father had intended for him; who therefore forced him to the bar, and the solicitation of public employments; so that he afterwards became quæstor, prætor, and, as Lipsius says, even consul. In the first year of the reign of Claudius, when Julia, the daughter of Germanicus, was accused of adultery by Messalina, and banished, Seneca was banished too, being charged as one of the adulterers. Corsica was the seat of his exile, where he lived eight years, ‘happy in the midst of those things which usually make other people miserable;’ and where he wrote his books of consolation, addressed to his mother Helvia, and to his friend Polybius, and perhaps some of those tragedies which go under his name; for he says, ‘modo se levioribus studiis ibi oblectasse.’ Agrrippina being married to Claudius, upon the death of Messalina, she prevailed with the emperor to recal Seneca from banishment; and afterwards procured him to be tutor to her son Nero, whom she designed for the empire. Afranius Burrhus, a prætorian prefect, was joined with him in this important charge; and these two preceptors, who were entrusted with equal authority, had each his respective department. By the bounty and generosity of his imperial pupil, Seneca acquired that prodigious wealth which rendered him in a manner equal to kings. His houses and walks were the most magnificent in Rome. His villas were innumerable; and he had immense sums of money placed out at interest in almost every part of the world. The historian Dio reports him to have had £250,000 sterling at interest in Britain alone; and reckons his calling it in all at a sum as one of the causes of a war with that nation. All this wealth, however, together with the luxury and effeminacy of a court, does not appear to have had any ill effect upon the temper and disposition of Seneca. He continued abstemious, exact in his manners, and, above all, free

from the vices so commonly prevalent in such places, flattery and ambition. ‘I had rather,’ said he to Nero, ‘offend you by speaking the truth, than please you by lying and flattery; maluerim veris offendere, quam placere adulando.’ How well he acquitted himself, in quality of preceptor to his prince, may be known from the first five years of Nero’s reign, which have always been considered as a perfect pattern of good government; and, if that emperor had but been as observant of his master through the whole course of it as he was at the beginning, he would have been the delight, and not, as he afterwards proved, the curse and detestation of mankind. But when Poppæa and Tigellinus had got the command of his humor, and hurried him into the most extravagant and abominable vices, he soon grew weary of his master, whose life must indeed have been a constant rebuke to him. Seneca, perceiving that his favor declined at court, and that he had many accusers about the prince, who were perpetually whispering in his ear the great riches of Seneca, his magnificent houses and fine gardens, and what a favorite he was grown with the people, made an offer of them all to Nero. Nero refused to accept them; which, however, did not hinder Seneca from changing his way of life; for, as Tacitus relates, ‘he kept no more levees, declined the usual civilities which had been paid to him, and under a pretence of indisposition, or some engagement or other, avoided as much as possible appearing in public.’ Nero, in the mean time, who had despatched Burrhus by poison, could not be easy till he had rid himself of Seneca also; for Burrhus was the manager of his military concerns, and Seneca conducted his civil affairs. Accordingly he attempted, by means of Cleonicus, a freedman of Seneca, to take him off by poison; but, this not succeeding, he ordered him to be put to death, upon an information that he was privy to Piso’s conspiracy against his person. Not that he had any real proof of Seneca’s being concerned in this plot, but only that he was glad of any pretence for destroying him. He left Seneca, however, at liberty to choose his manner of dying; who caused his veins to be opened immediately. His wife Paulina, who was very young in comparison of himself, had yet the resolution and affection to bear him company, and thereupon ordered her veins to be opened at the same time; but Nero gave orders to have her death prevented; upon which her wounds were bound up, and the blood stopped, just in time to save her; though, as Tacitus says, she looked miserably pale and wan all her life after. In the mean time Seneca, finding his death slow and lingering, desired Statius Annæus, his physician, to give him a dose of poison; but, this not having its usual effect, he was carried to a hot bath, where he was at length stifled with the steams. He died, as Lipsius thinks, in the sixty-third or sixty-fourth year of his age, and in about the tenth or eleventh of Nero’s reign. Tacitus, on mentioning his death, observes, that, as he entered the bath, he took of the water, and with it sprinkled some of his nearest domestics, saying, ‘That he offered those libations to Jupiter the deliverer.’ These words are an evident proof that Seneca was not a Christian.

as some have imagined him to have been ; and that the thirteen epistles from Seneca to St. Paul, and from St. Paul to Seneca, are supposititious pieces. His philosophical works are well known. They consist of 124 epistles and distinct treatises ; and, except his books of physical questions, are chiefly of the moral kind, treating of anger, consolation, providence, tranquillity of mind, constancy, clemency, the shortness of life, a happy life, retirement, benefits. He has been justly censured, by Quintilian and other critics, as one of the first corrupters of the Roman style ; but his works are highly valuable, on account of the vast erudition which they discover, and the beautiful moral sentiments which they contain.

**SENECA**, a county of the United States, westward of Albany, erected from Cayuga county, in 1804. It is bounded by Cayuga county north, east by Cayuga county and lake, south by Tompkins county, and west by Seneca lake. The surface of this county is either quite level, or gently undulated with hill and dale; though Hector and Ulysses, the two southern townships, are considerably hilly. The soil is principally a calcareous loam, or a well mixed vegetable mould, and in general will suit both grain and grass. Chief towns Waterloo and Ovid.

**SENECA**, a river of New York, which rises in the former country of the Seneca Indians, runs east and receives the waters of the Seneca and Cayuga lakes ; and afterwards falls into the Onondago, at Three Rivers, fourteen miles above the falls.

**SENECA, GUM**, properly Senegal gum. See **SENEGAL**. The consumption of this article in our manufactories is so considerable as to make it an object to find any kind of substitute that is cheaper and that will answer the purpose. In the *Repertory*, vol. iii., we find the following patent receipt for making a gum, which the inventor recommends under the name of the ‘ Britannic Elastic Gum,’ and which, among a variety of less important uses, is said to be suitable ‘ for painting, pencilling, and staining silks, calicoes, &c., and in dressing of silk, linen, and cotton, in the loom.’ The receipt is, linseed, or nut-oil, one gallon ; bees’ wax, one pound ; glue or size, six pounds ; verdigris, four ounces ; and the same of litharge. These he directs to be put into an iron kettle with two quarts of water, and the whole melted down together. Another invention is described in the same work, professedly as a ‘ substitute for gum, in thickening colors for printing.’ The patent was granted to Blakie of Glasgow, in 1788, and he describes his invention in the following words :—‘ The gum substitute, to thicken colors for calico-printing, and making up or furnishing printers’ color-tubs, and which may also be applied to several other uses, is prepared by boiling any quantity of flax-seed in a sufficient quantity of water, until the whole substance be extracted thereby ; and, having strained it through a linen or woollen cloth, again boil down the liquor to the consistence of a jelly. Put it into a close vessel, and, for preservation, put in a little strong spirits, or pour a little sweet-oil on the top of it ; bitters may also be used to preserve it. In using the substitute,

the printer may either put a certain quantity into a gallon of color, according to the nature of it, and the particular kind of work to be done, and regulate himself by trial, as is common in using gum ; or reduce the substitute, by boiling in water to the consistence wanted.’

**SENECAI, or SENECE** (Anthony Bauderon de), a French poet, born at Maçon, in 1645, was great-grandson of Brice Bauderon, a physician, famed for his *Pharmacopœia*. He purchased the place of first valet-de-chambre to queen Mary Theresa, wife to Louis XIV. He wrote many novels, satires, and epigrams ; but was most famed for his poem, entitled *Les Travaux d’Apollon*, which is highly praised by Rousseau. He died in 1737.

**SENECIO** (*Sossius*), a learned Roman, the intimate friend of Plutarch. He was four times consul. See **PLUTARCH**.

**SENECIO**, groundsel, in botany, a genus belonging to the class of syngenesia, and to the order of polygamia superfliua ; natural order forty-ninth, composite. The receptacle is naked ; the pappus simple : *cal.* cylindrical and calyculated. The scales are equal and contiguous, so as to seem entire ; those at the base are few, and have their apices or points decayed. There are fifty-seven species. Of these seven are British, viz. :—1. *S. crucifolius*, hoary perennial ragwort ; the corollæ are radiant ; the leaves are pinnatifid, dentated, and downy beneath ; the stem is erect, and two feet high ; the flowers are yellow, and grow in clusters. It is frequent in woods and hedges. 2. *S. jacobæus*, common ragwort ; the corollæ are radiant ; the leaves pinnated and lyre-shaped, and of a dark-green color ; the stalk is erect, round, and generally purplish ; the flowers grow in clusters on the tops of the stalks. The leaves have a bitterish subacrid taste, and extremely nauseous. Simon Paulli says that a decoction of them cured many soldiers of an epidemic dysentery. 3. *S. paludosus*, marsh ragwort ; the corollæ are radiant ; the leaves sword-shaped, acutely serrated, and somewhat downy underneath ; the stem is erect, branched towards the top, and four or five feet high ; the flowers are large and yellow. It is frequent in fens and ditches in England. 4. *S. saracenicus*, or sarrasin, broad-leaved ragwort ; the corollæ are radiant ; the leaves are lanceolated, serrated, and somewhat smooth ; the stem is erect, simple, and four or five feet high ; there are several flowers on each foot-stalk, which are yellow, and grow in clusters on the top. It grows in moist pastures in England ; and flowers in July or August. 5. *S. sylvaticus*, or mountain groundsel, has its corollæ revolute, its leaves pinnatifid and dentated, the stem comrybus and erect. It flowers in July, and is frequent in woods and heaths. 6. *S. viscosus*, or cotton groundsel, has its corollæ revolute, its leaves pinnatifid, viscid, and downy. The scales of the calyx are lax and hairy, and are of the same length with the perianthium. 7. *S. vulgaris*, the common groundsel, has its corollæ naked ; its leaves sessile, smooth, and sinuated ; their segments short, broad, and minutely serrated ; the flowers are yellow, and without radii. It grows in cultivated ground every where, and flowers in May.

Its leaves have been used in medicine externally as a vulnerary and refrigerant, and internally as a mild emetic; but they have little efficacy.

SENEGAL, a remarkable river of Africa, one of the principal which falls into the sea on its western coast. In early maps of Africa it was laid down as identical with the Niger, and delineated as coming from the most distant regions of the interior. The French, however, having fixed their head settlement at St. Louis, at the mouth of the Senegal, in the beginning of the last century, penetrated up the river as far as Gallam, where they established a fort. Tombuctoo, early celebrated as the centre of African wealth, being situated on the Niger, anxious enquiries were made as to the means of penetrating to that city by the Senegal. It was found, however, that about sixty miles above Gallam the country assumed a mountainous aspect, and the rocks intersected the river in such a manner as to render it impossible for barks to ascend. This was called the cataract of Feli; and about forty leagues higher were the falls of Govinea, which have not been carefully examined, but have been reported as very formidable. These obstacles served to account for the fact, which was soon ascertained, that there was no instance of a vessel sailing between Tombuctoo and Gallam. Still it was conceived that, by transporting goods from the rock of Feli to beyond that of Givonea, the benefit of the navigation of the supposed Niger might be obtained. In endeavouring, however, to trace the higher part of its course, the parties sent were perplexed by various and contradictory reports. According to some the Niger, after passing Tombuctoo, continued to flow westward, till it discharged itself into the Atlantic: others asserted that the river passing Tombuctoo flowed eastward, and had no communication with the Senegal. These last statements appeared so well attested that the learned French geographers, Delisle and D'Anville, hesitated not, in the course of the century, to make an essential change in the geography of this part of Africa, describing the Senegal as a completely distinct river from the Niger. They derived it erroneously, however, from the lake Maberia, which appears to be the same described by Mr. Park, under the name of Dibbe. At this time the persons best acquainted with the French settlement on the Senegal continued to cherish the old ideas, and to hope for a navigable intercourse with Tombuctoo.

The journey of Park, however, clearly ascertained the distinction between the two rivers and the eastward course of the Niger, to which a portion of what even Delisle and D'Anville had assigned to the Senegal belonged. He learned moreover the source of the Senegal, in the great range of mountains which traverses Manding and Jallonkadoo; from the other side of which the Niger takes its rise. Hence indeed descend a succession of rivers, the principal of which, called the Ba Fing, or Black River, is considered as the principal branch of the Senegal. Its source may be fixed pretty nearly in  $7^{\circ} 0' W.$  long. and  $11^{\circ} 50' N.$  lat. The Faleme, and the Ba Lee, or Kokoro, are also great streams, which joining

the Senegal, in Gallam, render it a river of the first magnitude. The whole of the early course of this river, and its tributaries, is through a country diversified by rugged and precipitous hills, and intersected by numerous streams, the sands of which, being impregnated with gold dust, afford a considerable source of wealth. The gold is extricated by women, by the mere process of agitation. Having passed Gallam, the Senegal rolls over a level plain, through Footh Torra, the states of the Siratik, and the country of the Foulahs: after passing Podor, about sixty leagues from its mouth, the level is so complete that Adamson does not conceive it to descend more than two feet and a half. The river in this part is bordered with vast woods, filled with numberless species of birds, and all the different kinds of monkeys and parrots in particular. Crocodiles, and other species of amphibia, also abound here, where finally the Senegal separates into branches, which form several large islands. The entrance is obstructed by a formidable bar, or ridge of sand, stretching across it at a little distance under water. It is in lat.  $16^{\circ} 5' N.$

There are two principal channels used by vessels, named the great and little passes. The former, though its breadth and direction often vary, is usually 100 fathoms wide, and from nine to thirteen feet deep, but, on account of the swell on it, vessels of eight feet only can pass it with safety, and even the smallest craft requires a pilot, who visits the pass every day; its length is about a mile and a half, and when within it the water becomes perfectly smooth, and the depth increases to four and six fathoms. The little pass is only fit for canoes. The most favorable time for entering the river is from April to June, when the winds blow from the south, and, the water being low, there is little current setting out. The most dangerous time is from September to December, when strong easterly winds and a rapid current cause a heavy surf to break quite across the bar. The river is navigable at all seasons for small vessels to Podor, sixty leagues from the bar, and in the rainy season for vessels of 150 tons to Galam, 200 leagues farther. From the bar the direction of the river is to the north; the western, or right bank, which separates it from the sea, being a narrow strip of sand, only 100 fathoms broad, and devoid of all vegetation. Its extremity is named Barbary Point, from which the bar stretches across to the main.

Four leagues above the bar is the isle St. Louis, the principal establishment of the French in Senegal. It is about a mile and a half long, and no where more than 300 yards broad; it is flat, and without other vegetation than mangroves at the northern extremity, some scattered palms, and some kitchen vegetables raised in gardens. It has no fresh water, and, that of the river being brackish from December to July, during this period the inhabitants are obliged either to send boats for the necessary supply above the reach of the tide, or to content themselves with what they can procure from holes dug in the sand on the shores of the island, but which loses little of its salt. The establishment of St. Louis consists

of a fort, an hospital, a church, about twenty brick houses, and the huts of the negroes. The fort is of an irregular form, consisting of walls of brick, with four round towers and some bastions; the magazines are within the fort. On the west side of the island is a battery of fourteen twenty-four pounders, which commands the strip of sand that separates the river from the sea; another battery of sixteen heavy guns on the south point of the island; a third on the north point of five guns; and a fourth a little north of the town of six eighteen pounders. The population of the island in 1801 was 10,000 persons, of whom 300 only were whites and free people of color, the remainder being slaves. The garrison in time of war ought to consist of 600 Europeans, and of 400 in peace; but these numbers were never complete.

Twenty-five leagues from St. Louis, ascending the Senegal, is L'Escale de Desert, on the right bank, a considerable trading place for gum. A little higher up on the opposite bank is a creek, or natural canal, called Portuguese River, which communicates with a lake called Panier Foulah, into which the waters of the Senegal rush with great rapidity in the rainy season. Sixty leagues above St. Louis is the fort of Podor on the left bank, and on the opposite bank below Podor the establishment Du Coq, and above it the settlement named Terrier Rouge; 255 leagues above St. Louis on the left bank is Galam, to which the free people of color of St. Louis and Goree make an annual voyage on the river, to purchase slaves. The boats, to the number of about forty, leave St. Louis in July, and do not arrive at Galam before October. A fair is held here the first fifteen days of November, where are exchanged European goods for gold dust, ivory, bullocks' hides, slaves, rice, millet, and maize, the latter for the provisioning of Goree and St. Louis. When the waters of the river begin to fall the boats descend, and arrive at St. Louis in fifteen days. Besides the tedious ascent of the river, and the unhealthiness at this season, which is almost certain destruction to Europeans, the merchants are laid under heavy contributions by the chiefs on the banks. The journey to Galam by land, it is said, may be made in twenty-five days with ease, during eight months of the year; but the most favorable season is in April, when the strong north winds moderate the heat.

Under the reign of Louis XIV. the energies of France began first to be directed towards colonies and commerce. When, in 1637, Jannequin undertook his voyage to the Senegal, he found no settlement by any European nation, and his party were obliged to erect temporary habitations at the village of Biyurt, on the left bank of the river. In 1664 the first West India company, being established at Dieppe, directed its operations towards this part of Africa: but it was soon involved in bankruptcy; and several similar companies, which followed in succession, were equally unfortunate. Each, however, at their commencement, made vigorous exertions to promote the trade, of which they had obtained the monopoly; so that the settlement soon acquired prosperity; and St. Louis, the capital of the new settlers, having the great advantage

of a secure situation, began to flourish. The present streets are said to be well arranged.

The chief branch of the commerce of this settlement consists in procuring the gum known by the name of gum Senegal. It has been ascertained, by experiment, that this is much superior to all the eastern kinds, and even to that of Arabia; that it is both more mucilaginous and gummy; that in some arts and trades no other gum can be used as a substitute; in short the use of it has become general within the last half century, it is now sought after with avidity. The acacia forests, from which this substance exudes, are in the track of desert extending northwards from the Senegal, and in the possession of three tribes of Moors, called Trarshaz, Braknaz, and Darmanko, who occupy about seven oases or verdant spots, in that vast tract bounded on the south by the Senegal, on the west by the Atlantic, and on the east and north, which extends indefinitely into the expanse of the Sahara. The three great gum forests are called Sahel, Al Fatack, and El Hiebar. The former, producing the white gum, held in highest estimation, is in the possession of the Trarshaz; the forest of Al Fatack belongs to the Braknaz, and that of El Hiebar to the Darmanko. These two last produce the red gum. The gum tree of the Senegal is in general not more than eighteen or twenty feet high, and its circumference seldom exceeds three feet. On the banks of the river, the trees have been observed from twenty-five to twenty-eight feet high; but there the soil is covered with a stratum of vegetable earth, and the trees are also few in number. In general, too, the gum tree of the desert is crooked, and has a rough and irregular appearance; such an appearance is common to all the productions of this tract, which are, as it were, stunted, so that the plants appear rather like bushes than shrubs. The aridity of the soil, and the severity of the winds, are probably the causes of this imperfect growth. The leaves of these trees are alternate, of a dry and dirty green; the branches are thorny at the points where the leaves project, the blossoms are white and very short, the bark is smooth, and of dark green. The period when the trees begin to give out their gum is about the 10th of November, when the great periodical rains have newly ceased. No artificial incision is necessary; for, as soon as the harmattan or hot wind of the desert begins to blow, the drying process is so powerful that the bark cracks in numberless places. The gum then issues out in various forms, but chiefly in drops about the size of a partridge's egg. The tenacity of the substance, however, is such as to prevent the drops from falling to the ground, when they would be in danger of being buried in the sand. They remain attached to the bark, near the spot whence they issued; they are always transparent and brilliant at the part where they are broken off, and, when they have been kept a few moments in the mouth, have all the clearness, limpidity, and transparency of the finest rock crystal. About the beginning of December the Moors of the three tribes quit their residences in the desert, where they leave only the aged, decrepid, and infants, with a few who are ne-

cessary to tend the cattle; all the rest set out in a confused and tumultuous crowd, the kings, princes, and rich men, riding on horses and camels, while the poor march on foot. In twelve days, or a fortnight, each tribe reaches the forest which belongs to it, and on the borders of which it forms an encampment. The harvest continues about six weeks, when the gum, being collected in heaps, is placed on the backs of camels and oxen, for the purpose of being transported to the banks of the Senegal. The camel generally carries from 4 cwt. to 5 cwt.; the ox about 150 lbs.; and the gum is contained in immense leather sacks, made of tanned ox hides. The great gum fair is at a spot on the northern bank of the Senegal, about mid-way between Podor and Fort St. Louis. There is not in the world a more barren and desolate spot; it is merely an immense plain, formed of white and moving sands; not a herb, plant, or shrub, varies the uniformity of this immense solitude. It does not even afford a drop of potable water, which must be brought from the river, or from the neighbourhood. Hither, at the usual time, the French merchants repair, to wait the arrival of the Moors. On the morning of their approach, there may be heard, even at a great distance, the confused noise of their armies in motion; and, towards noon, this vast and solitary plain appears covered with a multitude of men, women, camels, oxen, and goats, all enveloped in clouds of dust. Some of these animals carry the tents and baggage; on others are placed the women, who may be seen in the act of suckling their children. The kings and chiefs are mounted on beautiful horses, while their wives appear seated on a few chosen camels, elegantly caparisoned, in a kind of baskets covered with an awning. A band of Moors, armed with muskets and lances, escort this ambulatory horde, and vainly attempt to preserve some appearance of order. The air resounds with the voices of men, women, children, and animals; and the living creatures who fill the plain appear truly innumerable. At length, when the whole of this barbarous assemblage is collected, the camps are fixed; a cannon is then fired as a signal for beginning the fair. In carrying on the treaty there is no artifice to which these Moors do not resort; no lies which they do not invent to obtain a higher price for their merchandise; address and threats are alternately employed; and the kings and chiefs invent a hundred lies to extract higher prices, and more considerable presents. The most ridiculous pretensions are every year renewed by these artful savages, who purposely raise innumerable difficulties in the course of the negociation. Europeans are driven almost distracted by the extreme slowness and apathy of the Moors, who incessantly defer the termination of the business. Between the years 1785 and 1787 the quantity of gum actually bought by the French amounted to 800,000 lbs., independently of 400,000 lbs. carried to Portendick, and sold to the English. It is purchased in kantars, which originally contained about 500 lbs.; but the French, that they might not be behind hand in cheating, gradually increased the size of the kantar, without any observation being made by the Moors, who are

entire strangers to this kind of geometry. The kantar thus amounts now to about 2000 lbs. It is paid almost exclusively in East India cotton cloths, dyed with indigo, called pieces of guinea; each of these is seven or eight ells long, and half an ell broad. Attempts have been made to make them receive cottons of French manufacture; but the Moors immediately distinguish, by the smell, the genuine productions of the East Indies, and will accept of no other. The standard price of the kantar is fifteen pieces of guinea; and as these may be averaged at 25 francs, the original price of the kantar will be 375 francs (15s. 7½d.), which gives the pound of gum at nearly 3 sols, 6 deniers (not quite 2d.). The gum has sold in Europe at from 30 to 40 sols (15d. to 20d.); so that, after ample allowance for freight and charges, the profit must still be very great. The trade might admit of considerable extension, as there are two other forests at Guerouf and Gallam, farther up the Senegal, the gum from which might be procured at a cheaper rate, though with greater expense of transport.—Edinb. Gazetteer.

In 1786, besides gum, there were exported from the Senegal slaves to the number of 2200, valued at 2,640,000 livres; gold to the amount of 90,000 livres; ivory and miscellaneous articles to 130,000 livres. In the war of 1756 this settlement yielded to the victorious arms of Britain, and was ceded to this country at the peace of 1763. The French, however, retook it in 1779, and retained it at the peace of 1783. They lost it again in the revolutionary war; but, on the restoration of the Bourbons, it was again ceded to France. In sailing to resume possession, the Medusa frigate sustained that terrible shipwreck which seems to have paralysed all the further attempts to restore the importance of these settlements.

SENEGAMBIA, a name which has been given to those countries of Africa lying between the south limits of the Great Sahara and the mountains of Kong. They are watered by the Gambia, Senegal, and Rio Grande.

On passing from Sahara to the banks of the Senegal, we exchange an ocean of sand for a region of fertility, and the morose and ferocious Moor for the cheerful and placid negro; but the first feeling that springs from the transition is a recollection of that iniquitous traffic which equally degraded the negro and disgraced the European. Though the Senegal is the common line of demarcation, a few Moors are scattered among the negroes on the south of that river, and some negroes are intermixed with the Moors on its northern banks.

The interior of this part of western Africa had scarcely been visited by Europeans, previously to the end of the eighteenth century. The French had long before settled near the mouth of the Senegal, and the English had possessed themselves of the Gambia; but, as their object was trade, their descriptions were confined to the productions and inhabitants of the coast and the banks of the rivers. Since 1790, however, various travels have been undertaken, and several valuable works relative to Senegambia published. The two journeys of Park are well

known ; the works of Golberry and Durand have added much to our knowledge of this part of Africa ; the accounts published by the African Association have further increased our store of information ; and M. Mollien's late travels to the interior, and to the sources of the Senegal and the Gambia, have also disclosed several particulars. For the following brief sketch of the results, we are principally indebted to Dr. Myers.

The coast of this part of Africa is flat and sandy. The heights near Cape Verd, and some sand-hills about the fourteenth parallel, alone break the uniformity, till we reach the southern bank of the river of Sierra Leone, which presents some considerable elevations, in the prolongation of the mountains of the interior. The part of the country near the sea, as far as below  $12^{\circ}$  lat., is flat and sandy, and altogether free from stones. Eastward of this, for more than 100 miles, the soil is partly sandy, and partly argillaceous, quite smooth, and without stones. This tract ends toward the south on the banks of the river Rio Nunez. The third district, stretching as far as the base of the mountains, exceeds 150 miles in breadth, and terminates at the river Sierra Leone. The soil of this division is argillaceous, hilly, and stony. Beyond the waving line that bounds the eastern part of this district, the country is mountainous for about  $10^{\circ}$  long., rising in parallel terraces and chains, which increase in altitude as they approach the south, till they attain their greatest elevation between  $8^{\circ}$  and  $10^{\circ}$  N. lat. They begin to decline about  $7^{\circ}$  W. long.; and the declivity appears to be steeper towards the east than the west, and on the southern than the northern side. The extent of this mountainous country towards the south remains to be explored. Having entered the northern part of Footh Jallo, M. Mollien observes, 'from the summits of these heights, I discovered a considerable tract of country, studded with rocky mountains, whose summits were lost in the clouds, and separated from each other by frightful precipices ! Desolation reigned throughout ; some meadows, situated at the foot of these steep hills, but partially interrupted the dreary uniformity.' Having reached the top of the mountains of Tangua, about  $11^{\circ}$  of lat., and a little north of the source of the Gambia, the same traveller remarks, 'the mountains situated at the foot of that on which I stood resembled immense plains covered with a thick fog. The mountains of Tangue are of great elevation, and are crowned by a peak which is frequently concealed in the clouds. In the rainy season the clouds gather round their tops, the thunder is incessantly rolling there, and deluges of rain inundate the country below.' The air was so cold, in these elevated tracts, that this traveller was glad to find a sheltered place exposed to the rays of the sun to rest in. The whole of these elevated regions are said to be metallic, and particularly to abound in gold and iron. The courses of the rivers are often interrupted by ridges of rock which produce cataracts.

From M. Mollien's observations it appears that the sources of the great rivers which issue from the nucleus of African Mountains are

situated a little north-west of Teemboo. Another object which this French traveller was instructed to accomplish, if possible, was to discover the source of the Dialli Ba, or Niger; but this he was not able to reach. From the inhabitants of Teemboo, however, he learned, that the river was well known by that name, and that its source was situated in the mountains between Kouranco and Soliman. The account places it about eight days' journey south-east of that city. Its distance from Sierra Leone was also stated to be eleven days' journey on foot, which, through such a rugged district, cannot be estimated at much more than fifteen miles a day, which, therefore, makes it 165 miles.—The countries beyond the basins of these rivers we shall consider as belonging to the interior of the continent. This space, which stretches from about  $8^{\circ}$  to  $17^{\circ}$  N. lat., and from  $5^{\circ}$  to  $17^{\circ}$  W. long., is divided into such a labyrinth of small states that it would be impossible with our present knowledge to describe the boundaries and physical peculiarities of each. The most perspicuous view of this group of kingdoms, countries, and people, will therefore, be exhibited by first specifying a few of the leading distinctions of territory, and then delineating the peculiarities of the different tribes by whom they are inhabited. The most numerous people of these regions are the Jaloffs, or Yaloffs, which the French call the Oualoffs. The empire of the Jaloffs was anciently bounded on the north by the Senegal, and on the south by the Gambia, and it stretched from the sea to the Faleme. But this empire has been dismembered, and split into a variety of states, the principal of which are the following :—The kingdom of Brack or Wallo, occupies the north-west corner, and is situated on the south bank of the Senegal, where that river makes its principals weep before it enters the sea. The title of the reigning prince is Brack, and the crown is hereditary ; but it is the eldest son of the sovereign's sister who is the legitimate heir.

Cayor is the name of a kingdom extending along the coast, beyond Cape Verd. Between the southern confines of Cayor, and the northern bank of the Gambia, the kingdoms of Baol, Sin, and Barra, border on the coast. Behind the latter that of Badiloo extends along the same bank of the Gambia, till it forms nearly a line with the eastern parts of Baol and Sin. East of these three, stretches the kingdom of Salum, which, from its extent, with the number and civilisation of its inhabitants, is one of the most important of the Senegambian states. East of Salum and Cayor is the extensive kingdom of the Bourb-Jaloffs. In the interior of these lie the kingdoms of Footh-Toro and Woolli ; the former stretching along the southern bank of the Senegal to about  $11^{\circ}$  W. long. ; and the latter along the northern shore of the Gambia.

In the mountainous region, near the sources of the Senegal, spreads the native country of the Mandingoos. Its precise limits are uncertain ; but if we may judge from the celebrity of the people, the conquests they have made, the civilisation they have attained, the commercial spirit they have manifested, and the colonies they have

established, the kingdom must have been extensive, and the people powerful. It seems to be bounded on the west by Bambara, on the north by Fooladoo and on the south by Jallonkadoo. Fooladoo is considered as the native region of the Foulahs, who are now so widely spread through various parts of Western Africa. Their most important and populous kingdom is Footh-Jallo, a mountainous country near the source of the Gambia. The hilly regions that approach the interior comprise a number of separate states, among which are Bondou, Bambouk, Galam, or Kajaaga, and some others; but their limits, and even their names and situations, become more uncertain as we approach the interior.—South of the Gambia, the Feloops, the Bissagos, and other tribes, are intermixed with the Mandigoes and the Foulahs, as far as the British colony of Sierra Leone.

From the coast the ground rises imperceptibly to the confines of Footh-Toro, where it becomes level, and forms what may be denominated the first terrace in this part of Africa. Footh-Toro is one of the most extensive and important kingdoms of Senegambia. The country is watered by several rivers, and much of it is fertile. The land in the vales throughout which the rivers flow has been compared to the richest parts of France. Much of it is cultivated with great care; but the planting of trees is neglected, which gives the country a naked appearance. These cultivated grounds produce good crops of rice, millet, indigo, and tobacco. Various fruits are also grown, and many domestic cattle reared, while lions, panthers, hyenas, and jackals, are very numerous, and elephants are sometimes met with. Ostriches, vultures, Guinea-fowls, pigeons, turtle doves, partridges, paroquets, and several other birds, are common. The heat in this country is often intense, as Fahrenheit's thermometer frequently rises to 96° in the shade. The population is also considerable, and has been estimated at 2,000,000. The inhabitants trade with the Moors on the north, with the Footh-Jallos on the south, and with Europeans by means of the Senegal. The government of Footh-Toro, a kind of theocratic oligarchy, is virtually exercised by seven chiefs, each of whom possesses a part of the country, and all appear to be descendants of the original nation. These seven choose an almamy, or iman, from the common Marabouts, who is the nominal sovereign. All the acts of government are performed in his name, but he cannot take any step without consulting the council, formed of the seven electors. When they are not satisfied with the conduct of the almamy they retire during the night to an elevated spot, and deliberate on the choice of another, and, having fixed upon one, they desire attendance, and address him, saying, 'We have chosen thee to govern our country with wisdom.' He is then brought to the people, who are addressed by one of the chiefs, saying, 'Here is your king, obey him.' The people applaud the choice, salute the new king by discharging muskets, and the former almamy returns to the class of private citizens. So precarious, however, is the sovereign power, that they had no less than three successive almamies in 1818.

Bondou, which lies in the east of Footh-Toro, is of an elongated form, and is little more than a vast forest, much of which is either covered with hills or stones. Springs are common, and the lands, where free from stones and woods, are fertile. The soil near the banks of the Falme is rich, but the drought is such as only to admit of cultivation in the rainy season. The western parts of the kingdom contain iron, the eastern gold. Where it is cultivated, cotton, maize, millet, indigo, and tobacco, are grown. Wild beasts and game are plentiful, and afford the hunter a rich booty. The crown of Bondou is elective in the king's family, and the brother of the late king, when there is one, is usually preferred. The government is despotic.

Bambouk, which has always been considered the Peru of Africa, joins Bondou on the east. It is a country of mountains, which serve as a defence against the inhabitants of Bondou and Bambara, by whom its gold has always been considered a tempting prize. Nor have the contiguous people been the only rapacious enemies with whom the Bamboukians have had to contend; for the ruins of the forts erected by the Portuguese show that their zeal for the possession of this precious metal had early led them to the conquest of this distant region, but which they were long since obliged to abandon. The gold is generally found in conical hills of moderate elevation, mixed with earth and other substances, from which it is separated by the simple process of washing. Notwithstanding the imperfect manner in which these mines are worked, the quantity of gold obtained in Bambouk must be very great, as not only most of that which is brought down the Senegal and the Gambia is originally procured there, but much is carried to the east, and afterwards across the desert to Northern Africa and Egypt. Very malleable iron also abounds in this mountainous country, but want of skill in the working renders the quantity obtained comparatively small. Some parts of Bambouk are excessively hot; yet the mountainous nature of the country gives rise to numerous springs which diffuse a partial freshness through the atmosphere, and favor the growth of vegetation. Many of the valleys, therefore, produce rice, millet, peas, and other vegetables; while the baobab and the tamarind tree are very common. Herds of goats and horned cattle are kept in most parts of the country.

Galam, which lies between Bambouk and the Senegal, is esteemed one of the most fertile in Africa; millet, cotton, rice, maize, tobacco, and indigo, grow in great plenty; while milk, flesh, and fish, form a great part of the food of the inhabitants. Cameleopards, lions, and wild boars of large size, abound in the forests; and the hippopotamus and crocodile, with abundance of fish, stock the Senegal and its tributary streams. Large trees also shade the banks of many of these rivers.

Footh-Jallo spreads over the hilly region south of Bondou, where the great rivers of this part of Africa take their rise. It is a mountainous country, and the ranges by which it is intersected are considered as the branches of a

more lofty chain, situated south-east; the elevated summits of which, the negroes say, are constantly covered with a white hat. If this representation be correct, the mountains of Kong, to which it refers, and which are situated about 10° lat., in the hottest part of the globe, must be very elevated. The soil of the valleys in Footh Jallo is a rich mould which the torrents have washed from the mountains, and, being watered by numerous streams, is rendered very productive. Rice and maize are cultivated. The orange, the banana, and the papaw tree abound; but the immense baobab, the queen of the forest, is not met with, though other trees of large growth form almost impenetrable woods. The climate and temperature of Footh Jallo are subject to great variation. In the valleys the heat is often intense, while the elevation of some of the mountains exposes the traveller to the sensation of severe cold, though it does not cause that depression of the thermometer which would produce the same feeling in colder climates. Teemboo, or Timbo, is the capital of this country, and is esteemed one of the largest cities in this part of Africa, where scarcely any thing but villages, composed of a few huts, are to be met with. It is situated at the foot of a high mountain, and is supposed to contain about 9000 or 10,000 inhabitants. It has a spacious mosque and three forts, one of which contains the king's palace, which is composed of five or six large huts. The fortifications of the town are of earth, and in some places have loop holes; but when M. Mollien was there, in 1818, they were falling into decay. He thinks Teemboo an ancient place, as all the country round it bears the name. Though the houses are only huts, they are built with taste, and many of them have courts planted with papaw and banana trees. According to the same traveller, Tenda Maie is a small country enclosed by a bend of the Rio Grande, west of Footh Jallo, not yet mentioned by any geographer. It is a flat fertile tract, though in some places sandy. The rains do not last so long by a month as among the hills of Footh Jallo. It produces millet, maize, rice, and cattle. Deer and wild cattle are also to be seen; but the elephant is not found, and beasts of prey are rarely met with. Many valuable woods grow in the forests, and iron is obtained, which is in much request among the neighbouring nations. The inhabitants are a mixture of Mahometans and Pagans.

The Jaloffs, or Oualoffs, which have also been called Yoloffs, occupy the greatest part of the country between the lower parts of the Senegal and the Gambia. M. Golberry estimates the extent of their territory at 4800 square leagues. They are considered as the handsomest negroes in this part of Africa. Their color is a bright black, their hair woolly, their noses flat, and lips protuberant, but less so than in the Mandingoës. Their features, however, are regular, and their physiognomy open and agreeable. They consider themselves the most ancient inhabitants of these regions, and were formerly all subject to one empire, called the Bourb-Jaloff, which still occupies a large tract of country in the interior. The Jaloffs are professed Mahometans, but the doctrines and precepts of the Koran are inter-

mixed with the superstitious practices of their ancient paganism. The number of pagans among them is still great, the religion of whom is pure fetishism. A tree, a stone, a serpent, a ram's-horn, or a scrap of paper covered with Arabic characters, or any other figures, are equally deities to them. Their language is superior to that of their neighbours; but, like them, they have no written characters. They reckon by five figures only, instead of ten, as in our mode of notation, and all their computations are performed by the motions of the fingers. They are great hunters, and excel in the number and management of their horses. They are also reputed to be courageous warriors when engaged with negroes, but pusillanimous in opposition to the Moors. The Jaloffs are not entirely destitute of manufactures, though these are still in their infancy among all the African nations. Some few metallic articles and domestic utensils are made, and the Jaloffs surpass most of the others in manufacturing and dyeing cotton; but, as among the other negroes, necessity and industry are correlative terms. As they find dexterity more congenial than laborious exertion, it is much practised, and those who reside in the neighbourhood of European settlements are considered as accomplished thieves.

The Feloops are spread over a wide space on the south of the Gambia. Their country is extensive, and being a low tract, produces rice and other kinds of grain, where properly cultivated. They have also plenty of goats and poultry, with which they supply European traders that touch at the coast. They are described as a wild unsociable race, speaking a peculiar language, which few Europeans understand. They have abundance of honey, of which they make an intoxicating liquor like mead. They appear to be complete Pagans.

SENESCENCE, *n. s.* Lat. *senesco*. The state of growing old; decay by time.

The earth and all things will continue in the state wherein they now are, without the least *senescence* or decay; without jarring, disorder, or invasion of one another.

*Woodward.*

SENESCHAI, *n. s.* Fr. *seneschal*. See its etymology below. One who had in great houses the care of feasts or domestic ceremonies.

John earl of Huntingdon, under his seal of arms, made Sir John Arundel of Trerice, *seneschal* of his household, as well in peace as in war.

*Carew's Survey of Cornwall.*

Marshall'd feast,  
Served up in hall with sewers and *seneschals*,

The skill of artifice, or office, mean!

*Milton's Paradise Lost.*

The *seneschal* rebuked in haste withdrew;  
With equal haste a menial train pursue.

*Pope's Odyssey.*

SENECHAI. (*seneschallus*), derived from the German *sein*, a house or place, and *scale*, an officer, is a steward, and signifies one who has the dispensing of justice in some particular cases: as the high *seneschal* or steward of England; *seneschal de la hotel de roi*, 'steward of the king's household, *seneschal*, or steward of courts,' &c.—Co. Lit. 61. Kitch. 83. See STEWARD. This is the most ancient of all the

titles or dignities which were attached to those individuals that undertook the command of armies, when the kings of France, belonging to the second race, ceased to go in person. The seneschal was selected by the sovereign from among those vassals and subjects who were highest in nobility, and were most distinguished for their rank, wealth, and talents. The title of grand seneschal of France was first created by Lotharius, in 928, and conferred upon Geoffrey, count of Anjou, surnamed Grisegonnelle. This rank or situation continued to be attached to the count of Anjou, until the reign of Philip Augustus, in whom it was extinguished, when he ascended the throne of France in 1121. The grand seneschal likewise exercised the functions of lord steward of the king's household; having under him several subordinate seneschals, who also held places of considerable trust. These were called senechaux de France, seneschals of France.

**SE'NILE, adj.** Lat. *senilis*. Belonging to old age; consequent on old age.

My green youth made me very unripe for a task of that nature, whose difficulty requires that it should be handled by a person in whom nature, education, and time, have happily matched a *senile* maturity of judgment with youthful vigor of fancy.

*Boyle on Colours.*

**SENIOR, n. s.** { Lat. *senior*. One older SENIORITY. { than other; one who, on account of longer time, has some superiority: the state or honor of a senior; eldership.

How can you admit your *seniors* to the examination or allowing of them, not only being inferior in office and calling, but in gifts also.

*Whitgiste.*

A senior of the place replies,

Well read, and curious of antiquities.

*Druden.*

As in insurrections the ringleader is looked on with a peculiar severity, so, in this case, the first provoker has, by his *seniority* and primogeniture, a double portion of the guilt.

*Government of the Tongue.*

He was the elder brother, and Ulysses might be consigned to his care by the right due to his *seniority*.

*Broome.*

**SEN'LIS**, an old town in the department of the Oise, France, situated on a rising ground, in the middle of an extensive forest, near the Nonette. Its streets are narrow and the houses ill-built; the cathedral is, however, admired. Senlis has some trade in corn, wine, and wood, and manufactures on a small scale of cotton, coarse woollens, paper, lace, and porcelain. Its quarries afford good stone. Here are two great yearly fairs, one in April, the other in October. Inhabitants 4300. Thirty miles north of Paris.

**SENN**, a kind of itinerant cow-keeper in Switzerland, particularly in the canton of Appenzell. These men do not grow so much hay themselves as they require for their cattle during the winter season, and some of them have no grass lands at all. To supply this deficiency, they employ agents throughout the canton, who are to inform them where good hay may be obtained, which farmers made in favorable weather, &c., and then the senn, or the great cow-keeper, who is in want of fodder, makes his agreements for the winter with the wealthier farmers, to whom he successively drives his cattle as soon

as they return from grass. Thus the itinerant senn, with his cows, often visits five different places during the winter season. He who sells the hay furnishes the senn not only with stabling for his beasts, but boards and lodges him as well as his whole family. In return, the senn, besides paying the stipulated price for the hay, allows to his host as much milk, whey, and zieger (a kind of lean cheese), as may be used in the house, and leaves him also the manure of his cows. In the middle of April, when nature revives, the senn again issues forth with his herd to the meadows and fertile Alps, which he rents for the summer. Thus the life of these men is constant migration, affording the most pleasing variety, and blessing them with health, content, and cheerfulness; but they had not been then cursed with French fraternity. Fine cattle are the pride of the cow-keeper who inhabits the Alps; but, not satisfied with their natural beauty, he will likewise please his vanity. He adorns his best cows with large bells suspended from broad thongs; and the expense in such bells is carried even to a luxurious excess. Every senn has an harmonious set of at least two or three bells, chiming in with the famous *ranz des vaches*, or song of the cow-herds. The Tyrolese bring bells of all sizes to every fair kept in the canton of Appenzell. They are fixed to a broad strap, neatly pinked, cut out, and embroidered; which is fastened round the cow's neck by a large buckle. A bell of the largest size measures upwards of a foot in diameter, is of a uniform width at top, swells out in the middle, and tapers towards the end. It costs from forty to fifty guilders; and the whole peal of bells, including the thongs, will sometimes be worth 140 or 150 guilders; while the whole apparel of the senn himself, when best attired, does not amount to the price of twenty guilders. The finest black cow is adorned with the largest bell, and those next in appearance have two smaller. These ornaments, however, are not worn every day, but only on solemn occasions; viz. when in the spring they are driven up the Alps, or removed from one pasture to another; or when they descend in the autumn, or travel in the winter, to the different farms where their owner has contracted for hay. On such days, the senn, even in the depth of winter, appears dressed in a fine white shirt, of which the sleeves are rolled up above the elbow; neatly embroidered red braces keep up his yellow linen trousers, which reach down to the shoes; a small leather cap or hat covers his head, and a new milk bowl of wood, skilfully carved, hangs across the left shoulder. Thus arrayed, the senn precedes, singing the *ranz des vaches*, and followed by three or four fine goats; next comes the handsomest cow with the great bell; then the two other cows with smaller bells; and these are succeeded by the rest of the cattle walking one after another, and having in their rear the bull with a one-legged milking-stool hanging on his horns; the procession is closed by a trianeu, or sledge, on which are placed the implements for the dairy. It is surprising to see how proud and pleased the cows stalk forth when ornamented with their bells. Who would imagine that even these animals are

sensible of their rank, nay, touched with vanity and jealousy! If the leading cow, who hitherto bore the largest bell, be deprived of her honors, she very plainly manifests her grief at the disgrace, by lowing incessantly, abstaining from food, and growing lean. The happy rival, on whom the distinguishing badge of superiority has devolved, experiences her marked vengeance, and is butted, wounded, and persecuted by her in the most furious manner; until the former either recovers her bell, or is entirely removed from the herd. However singular this phenomenon may appear, it is placed beyond all doubt by the concurring testimony of centuries. The cows, when dispersed on the Alps, are brought together by the voice of the senn, who is then said to allure them (*locken*). How well the cattle distinguish the note of their keeper, appears from the circumstance of their hastening to him, though at a great distance, whenever he begins to hum the *ranz des vaches*. He furnishes that cow which is wont to stray farthest with a small bell, and knows by her arrival that all the rest are assembled.

**SEN'NA, n. s.** Lat. *sena*. A physical tree.

What rhubarb; *senna*, or what purgative drug,  
Would scour these English hence.

*Shakspeare, Macbeth.*

*Senna* tree is of two sorts; the bastard *senna*, and the scorpion *senna*; both which yield a pleasant leaf and flower.

*Mortimer.*

**SENNA** is the leaf of the cassia *senna* of Linnaeus. See **CASSIA**. It appears to have been cultivated in England, in the time of Parkinson (1640); and Miller tells us that, by keeping these plants in a hot-bed all the summer, he frequently had them in flower; but adds, it is very rarely that they perfect their seeds in England. *Senna*, which is in common use as a purgative, was first known to the Arabian physicians Serapion and Mesue; the first among the Greeks who takes any notice of it is Actuarius, but he only speaks of the fruit not of the leaves. To remove the disagreeable taste of this medicine, Dr. Cullen recommends coriander seeds; and, for preventing the griping with which it is sometimes attended, he thinks the warmest aromatics, as cardamoms or ginger, would be more effectual.

**SENNA, ITALICA**, or blunt-leaved *senna*, is a variety of the Alexandrian species; which, by its cultivation in the south of France (late Provence), has been found to assume this change. It is less purgative than the pointed-leaved *senna*, and is therefore to be given in larger doses. It was employed as a cathartic by Dr. Wright at Jamaica, where it grows on the sand-banks near the sea.

**SENNAAR**, an extensive country of the ancient Abyssinia, on the southern borders of Nubia, appears to be contiguous to both Abyssinia and Kordofan. Where the soil is overflowed by the Nile it is extremely fertile, and produces abundant crops of dhourra, the principal food of the inhabitants. Wheat and rice are also grown in small quantities. Though rich in vegetable products, and contributing so largely to the support of both man and beast, the soil of this country is said to be singularly unfavorable to their propagation. This Mr.

Bruce ascribes to some noxious quality in the earth. Most of it is impregnated with a species of salt, which is extracted in great quantities in various parts of the country, particularly at Holfaia.

Sennaar has to boast of an excellent breed of horses, praised alike for their size, strength, movements, and general symmetry, their capability of enduring fatigue, and their docility of temper. The town of Sennaar stands on the bank of the Nile, and is described as very populous, and containing many good houses, at least in comparison with the other places. They are all built of clay with a little straw intermixed. Poncet says in his time they had only one story; but now all the principal have two, and parapet roofs, though in most other regions within the influence of the tropical rains the roofs are conical.

Sennaar is a place of considerable trade. Caravans travel in various directions, to Egypt, to Souakin, on the shores of the Red Sea, to Darfur, and other places in the interior. Commerce is indeed the very life of society, and there is not a single family which is not more or less connected with some branch of trade.

The people of Berber, Shendy, and Sennaar, appear to be traders in the strictest sense of the term. Their dress is extremely simple. A long shirt of blue Surat cloth, called marowty, covers them from the lower part of the neck down to the feet; the neck itself is left open, which alone distinguishes the dress of the men from that of the women, who button this shirt round the neck. The men sometimes tie a sash round the middle; and respectable people of both sexes go through the house barefooted. The apartments, particularly those of the females, have the floor covered with Persian carpets. In going out they wear sandals, and a kind of wooden patten, ornamented with shells. With a view to coolness, they have buckets of water thrown upon them in the middle of the day; and, in order to preserve themselves from cutaneous eruptions, of which they entertain a great dread, they anoint themselves daily with camel's grease mixed with civet; and for the same reason, though they put on every day a clean shirt, they lie all night upon one dipt in grease, which forms their only covering.

The couch itself is made generally of a tanned bull's hide, much softened by this constant greasing, which occasions a smell from which nothing can free them. The principal diet of the poor consists of bread and flour made of millet. The rich make it into a pudding toasted before the fire, with milk and butter; besides which they eat beef, partly roasted and partly raw. Their horned cattle are the largest and fattest in the world; but camel's flesh is the meat chiefly sold in the market. The liver of the animal and the spare-rib are eaten raw. Hog's flesh is not sold in the market, but is eaten publicly by the people at large, and secretly by those who pretend to be Mahometans. The prevalent diseases are the dysentery and the bloody flux, frequently accompanied by intermitting fever, for which bark is found a sovereign cure. Epilepsies and schirrous livers are likewise very frequent. Those who live much in

camps, or in quarters distant from rivers, have more or less the gravel, occasioned probably by the use of well water; but at Sennaar this malady is rare. The elephantiasis is not known, nor is the small pox endemic.

The commerce of Sennaar consists chiefly in exchanging the productions of interior Africa with those of Egypt and Arabia. The most extensive communication is with Suakin and Jidda, by Shendi, and across the track extending from the Nile to the Red Sea. With Egypt the intercourse is conducted by two different routes. One leads along the east of the Nile, and follows the course of that river to Shendi, when the caravans strike across the vast deserts of Nubia. The other track is west of the Nile. The caravans here, in coming from Egypt, quit the Nile at Siout, then strike across the equally extensive desert to the west of that river. They refresh themselves at Charje or the Great Oasis, then proceed for some time by the same track as the caravans to Darfur, till they rejoin the Nile at Moscho, in the territory of Dangola. After passing through the capital of that kingdom, they come to Korti, where they proceed across the desert of Bahiouda, and, joining the Nile at Derri, follow its course to Sennaar. The commodities drawn from interior Africa, for export to Egypt and Arabia, are gold dust, called tibbar, ivory, civet, rhinoceros' horns, but, above all, slaves. The gold still maintains its reputation as the purest and best in Africa. The foreign commodity chiefly sought after is blue cloth from Surat. They receive also spices, hardware, and toys, particularly a kind of black beads made at Venice.

In the early ages of Christianity this country, like Abyssinia, underwent a nominal conversion. The greater part of the inhabitants are now Mahometans however; but practise Pagan as well as Christian rites. The government is an absolute monarchy, founded as late as the sixteenth century by a body of Shilluk negroes. On the accession of a new king, all his brothers who can be found are almost invariably put to death: no female is allowed to reign, and the princesses, who are very numerous, meet with little more respect than their female attendants. This absolute power, however, is tempered by an extraordinary limitation, which is, that the king may lawfully be put to death by a council of the great officers, whenever they choose to decide that his reign is no longer for the benefit of the public. The execution of the sentence is entrusted to an officer called the sid-el-coom, who is a member of the monarch's own family, and master of his household. The fact appears to be, that the hereditary kings have sunk into a species of pageants, kept up merely to amuse the people, and that the real power is now in the hands of the chief officers, civil and military. The troops stationed immediately around the capital consist of about 14,000, of a race of negroes called Nuba, from which is derived the general name of Nubia. The infantry are armed with a short javelin and a round shield, and appear to be by no means good troops; but the horse amounting to 1800, though armed only with coats of mail and a broad Slavonian

sword, appeared to Mr. Bruce equal to any he had seen. Sennaar has three tributary governments: Kordofan, situated between Sennaar and Darfur, to which latter country it is occasionally subjected; Fazuolo, to the south, a mountainous territory, affording a large supply of gold and slaves, the staples of interior Africa. The government of Sennaar, on conquering this territory, continued its mek or sovereign in the capacity of governor. The third government is that of El Acie, or Alleis, on the Bahr el Abiad, including the original country of the Shilluk tribes. The inhabitants are fishermen, and possess a vast number of boats, with large fleets of which they made their invasion in 1504, and possessed themselves of this sovereignty.

Mr. Bruce, who passed through this country in his return from Abyssinia, gives a list of twenty kings who have reigned in it since its conquest by the Shilluks, and of the remarkable custom by which the king ascends the throne with the expectation of being murdered, whenever the general council of the nation thinks proper. The dreadful office of executioner belongs to a single officer, he says, styled, in the language of the country, Sid-el-Coom; and who is always a relation of the monarch himself. It was from his registers that Mr. Bruce took the list of the kings already mentioned, with the number of years they reigned, and which may therefore be received as authentic. The Sid-el-Coom in office at the time that Mr. Bruce visited this country was named Achmet, and was one of his best friends. He had murdered the late king, with three of his sons, one of whom was an infant at its mother's breast; he was also in daily expectation of performing the same office to the reigning sovereign. He was by no means reserved concerning the nature of his office. When asked by Mr. Bruce why he murdered the king's young son in his father's presence? he answered that he did it from a principle of duty to the king himself, who had a right to see his son killed in a lawful and regular manner, which was by cutting his throat with a sword, and not in a more painful or ignominious way, which the malice of his enemies might possibly have inflicted. The king, he said, was very little concerned at the sight of his son's death, but he was so very unwilling to die himself that he often pressed the executioner to let him escape; but, finding his entreaties ineffectual, he submitted at last without resistance. On being asked whether he was not afraid of coming into the presence of the king, considering the office he might possibly have to perform? he replied that he was not in the least afraid on this account; that it was his duty to be with the king every morning, and very late in the evening; that the king knew he would have no hand in promoting his death; but that, when the matter was absolutely determined, the rest was only an affair of decency; and it would undoubtedly be his own choice rather to fall by the hand of his own relation in private than by a hired assassin, an Arab, or a Christian slave, in sight of the populace. On the death of any of the sovereigns of this country, his eldest son succeeds; on which as many of his brothers as can be found are apprehended,

and put to death by the Sid-el-Coom. Women are excluded from the sovereignty here as well as in Abyssinia. The princesses of Sennaar, however, are worse off than those of Abyssinia, having no settled income, nor being treated in any degree better than the daughters of private persons. The king is obliged, once in his life-time, to plough and sow a piece of ground, whence he is named Baady, the 'countryman or peasant,' a title as common among the monarchs of Sennaar as Cæsar was among the Romans. The royal family marry Arab women; the white color of the mother is communicated to the child. This, we are told by Mr. Bruce, is invariably the case when a negro man of Sennaar marries an Arab woman; and it holds equally good when an Arab man marries a negro woman; and he likewise informs us that he never saw one black Arab all the time that he was at Sennaar. The soil and climate of this country is extremely unfavorable both to man and beast. The men are strong and remarkable for their size, but short-lived; and there is such a mortality among the children that, were it not for a constant importation of slaves, the metropolis would be depopulated. The shortness of their lives, however, may perhaps be accounted for, from their indulging themselves from their infancy in every kind of excess. No horse, mule, nor ass, will live at Sennaar, or for many miles round it. The case is the same with bullocks, sheep, dogs, cats, and poultry; all of them must go to the sands every half year. Bruce assures us this is the case every where about the metropolis of this country, where the soil is a fat earth during the first season of the rains. Two greyhounds which he brought along with him from Atbara, and the mules he brought from Abyssinia, lived only a few weeks after their arrival at Sennaar. Several of the kings of Sennaar have tried to keep lions, but it was almost found impossible to preserve them alive after the rains. They will live, however, as well as other quadrupeds, in the sands, at no great distance from the capital. No species of tree, except the lemon, flowers near this city. In other parts the soil of Sennaar is exceedingly fertile, being said to yield 300 fold.

About twelve miles to the north-west of Sennaar is a collection of villages named Shaddly, from a great saint of that name who constructed several granaries here. These granaries are large pits dug in the ground, and well plastered in the inside with clay, then filled with grain when it is at its lowest price, and afterwards covered up and plastered again at top: these pits they call matamores. On any prospect of dearth they are opened, and the corn sold to the people. About twenty-five miles north of Shaddly there is another set of granaries named Wed-Aboud, still greater than Shaddly; and upon these two the subsistence of the Arabs principally depends: for as these people are at continual war with each other, and direct their fury rather against the crops than the persons of their enemies, the whole of them would be unavoidably starved, were it not for this extraordinary resource. Small villages of soldiers are scattered up and down this country to guard the grain after it is sown,

which is only that species of millet named dora. There are great hollows made in the earth at proper distances throughout the country, which fill with water in the rainy season, and are afterwards of great use to the Arabs as they pass from the cultivated parts of the sands. The fly, which is such a dreadful enemy to the cattle, is never seen to the northward of Shaddly. To the west of these granaries the country is quite full of trees as far as the river Abiad, or El-aice. In this extensive plain there are two ridges of mountains, one called Jebbel Moira, or the Mountain of Water; the other Jebbel Segud, or the Cold Mountain. Both enjoy a fine climate, and serve for a protection to the farms about Shaddly and Aboud already mentioned. Here also are fortresses placed in the way of the Arabs, which oblige them to pay tribute in their flight from the cultivated country, during the rains, to the dry lands of Atbara. Each of these districts is governed by the descendants of their ancient and native princes, who long resisted all the power of the Arabs. Sacrifices of a horrid nature are said to have been offered up on these mountains till about the year 1554, when one of the kings of Sennaar besieged first one and then the other of the princes in their mountains; and, having forced them to surrender, he fastened a chain of gold to each of their ears, exposed them in the market-place at Sennaar, and sold them for slaves at less than a farthing each. Soon after this they were circumcised, converted to the Mahometan religion, and restored to their kingdom. 'Nothing,' says Mr. Bruce, 'is more pleasant, than the country around Sennaar in the end of August and beginning of September. The grain, being now sprung up, makes the whole of this immense plain appear a level green land, interspersed with great lakes of water, and ornamented at certain intervals, with groups of villages; the conical tops of the houses presenting at a distance the appearance of small encampments. Through this very extensive plain winds the Nile, a delightful river there, above a mile broad, full to the very brim, but never overflowing. Every where on these banks are seen herds of the most beautiful cattle of various kinds. The banks of the Nile about Sennaar resemble the pleasantest part of Holland in summer: but soon after, when the rains cease, and the sun exerts its utmost influence, the dora begins to ripen, the leaves to turn yellow and to rot, the lakes to putrefy, smell, become full of vermin, and all its beauty suddenly disappears: bare scorched Nubia returns, and all its terrors of poisonous winds and moving sands, glowing and ventilated with sultry blasts, which are followed by a troop of terrible attendants; epilepsies, apoplexies, violent fevers, obstinate agues, and lingering painful dysenteries, still more obstinate and mortal. War and treason seem to be the only employments of this horrid people, whom Heaven has separated by almost impassable deserts from the rest of mankind; confining them to an accursed spot, seemingly to give them an earnest in time of the only other curse which he has reserved to them for an eternal hereafter.'

With regard to the climate of the country round Sennaar, Mr. Bruce has several very curious obser-

vations. The thermometer rises in the shade to  $119^{\circ}$ ; but the degree indicated by this instrument does not at all correspond with the sensations occasioned by it, nor with the color of the people who live under it. ‘Nations of blacks,’ says he, ‘live within lat.  $13^{\circ}$  and  $14^{\circ}$ ; about  $10^{\circ}$  south of them, nearly under the line, all the people are white, as we had an opportunity of observing daily in the Galla Sennaar, which is in lat.  $13^{\circ}$ , and is hotter by the thermometer  $50^{\circ}$ , when the sun is most distant from it, than Gondar, which is a degree farther south when the sun is vertical. At Sennaar, from  $70^{\circ}$  to  $78^{\circ}$  of Fahrenheit’s thermometer is cool; from  $79^{\circ}$  to  $92^{\circ}$  temperate; at  $92^{\circ}$  begins warmth. Although the degree of the thermometer marks a greater heat than is felt by us strangers, the sensations of the natives bear still a less proportion to that degree than ours. On the 2nd of August, while I was lying perfectly enervated on a carpet in a room deluged with water at twelve o’clock, the thermometer at  $116^{\circ}$ , I saw several black laborers pulling down a house, working with great vigor, without any symptoms of being incommoded.’ The dress of the people of Sennaar consists only of a long shirt of blue cloth, which wraps them up from the under part of the neck to the feet. The men sometimes have a sash tied about their middle; and both men and women go barefooted in the houses, whatever their rank may be. The floors of their apartments, especially those of the women, are covered with Persian carpets. Both men and women anoint themselves, at least once a day, with camels’ grease mixed with civet, which, they imagine, softens their skins, and preserves them from cutaneous eruptions, of which they are so fearful that they confine themselves to the house, if they observe the smallest pimple on their skins. With the same view of preserving their skins, though they have a clean shirt every day, they sleep with a greased one at night, having no other covering but this. Their bed is a tanned bull’s hide, which this constant greasing softens very much; it is also very cool, though it gives a smell to their bodies from which they cannot be freed by any washing. Our author gives a very curious description of the queens and ladies of the court at Sennaar. He had access to them as a physician, and was permitted to pay his visit alone. He was first shown into a large square apartment, where there were about fifty black women, all quite naked, excepting a very narrow piece of cotton rag about their waists. As he was musing whether these were all queens, one of them took him by the hand, and led him into another apartment much better lighted than the former. Here he saw three women sitting upon a bench or sofa covered with blue Surat cloth; they themselves being clothed from the neck to the feet with cotton shirts of the same color. These were three of the king’s wives; his favorite, who was one of the number, appeared to be about six feet high, and so corpulent that our traveller imagined her to be the largest creature he had seen next to the elephant and rhinoceros. Her features perfectly resembled those of a negro; a ring of gold passed through her under lip, and weighed it down, till, like a flap, it

covered her chin, leaving her teeth bare, which were small and very fine. The inside of her lip was made black with antimony. Her ears reached down to her shoulders, and had the appearance of wings; there was a gold ring in each of them about five inches in diameter, and somewhat smaller than a man’s little finger; the weight of which had drawn down the hole, where her ear was pierced, so much that three fingers might easily pass above the ring. She had a gold necklace of several rows, one below another; to which were hung rows of sequins pierced. She had two manacles of gold upon her ankles, larger than those used for chaining felons. Our author could not imagine how it was possible for her to walk with them, till he was informed that they were hollow. The others were dressed much in the same manner; only there was one who had chains coming from her ears to the outside of each nostril, where they were fastened. A ring was also put through the gristle of her nose, and which hung down to the opening of her mouth; having altogether something of the appearance of a horse’s bridle; and Mr. Bruce thinks that she must have breathed with difficulty.

SENNACHERIB, king of Assyria, succeeded his father Salmanasar, about A.A.C. 714. Hezekiah, king of Judea, having refused to pay him tribute, though he afterwards submitted, he invaded Judah with a great army, took several forts, and after repeated insolent and blasphemous messages besieged Jerusalem; but his army being suddenly smitten with a pestilence, which cut off 185,000 in a night, he returned to Nineveh, where he was murdered in the temple of Nisroch by his sons Adramelech and Sharezer, and was succeeded by his other son Esar-haddon. (See ASSYRIA, and 2 Kings xviii. and xix.) Herodotus tells us that he also attempted to invade Egypt, but was defeated by an army of rats. See EGYPT.

SENNAR. See SENNAAR.

SENNE, a river of the French empire, in the department of the Dyle, and ci-devant province of Austrian Brabant, which runs into the Demer, a little below Malines.

SENNEFIELD, an imperial town of Germany, allotted by the division of the indemnities to the king of Bavaria, the same with Sennfield in Franconia, two miles south-east of Schweinfurt.

SENYERTUS (Daniel), an eminent physician, born in 1572 at Breslaw. In 1593 he was sent to Wirtemberg, where he made great progress in philosophy and physic. He visited the universities of Leipsic, Jena, Francfort on the Oder, and Berlin; but soon returned to Wirtemberg, where he obtained the degree of M. D., and soon after a professorship in the same faculty. He was the first who introduced the study of chemistry into that university, and gained great reputation by his works, his practice, and his benevolent disposition. He died of the plague at Wirtemberg, in 1637. By contradicting the ancients, he raised himself enemies. Having asserted that the seed of all living creatures is animated, and that the soul of this seed produces organisation, he was accused of impiety, and even blasphemy. Among his writings

are, *Epitome Naturalis Scientiæ*, 1618, 8vo., repeatedly printed; *Liber de Chymicorum consensu et dissensu cum Aristotelicis et Galenicis*, 1629, 4to.; and *Hypomnemata Physica*, 1650. These were much in request in the seventeenth century, and were published collectively at Lyons, 1676, 6 vols. folio.

**SENNERTUS** (Andrew), eldest son of the preceding, also received his education at Würtemberg, and after visiting Leipsic, Jena, and Strasburg, and the Dutch universities, became professor of the oriental languages in that university. He died in 1679, aged sixty-three. Besides a number of philological dissertations, he was the author of *Hypotyposis Harmonica Linguarum Orientalium, Chaldeæ, Syrae, Arabica cum Matre Hebræa*, 1666, 4to.; *Sciagraphia, Doctrinæ inextricabalis adhuc dei Accentibus Hebreorum*, 1664, 4to.; *Dissertatio de Lingua-rum Orientalium Originibus, Antiquitate, Progressione, Incrementis*, 1669; &c. &c.

**SEN'NIGHT, n.s.** Contracted from seven-night. The space of seven nights and days; a week. See **FORTNIGHT**. If mention is made, on Monday, of Thursday sennight, the Thursday that follows the next Thursday is meant.

Time trots hard with a young maid between the contract of her marriage and the day it is solemnized; if the interim be but a *se'nights*, time's pace is so hard that it seems the length of seven years.

*Shakspeare. As You Like It.*

**SENOC'ULAR, adj.** Lat. *seni* and *oculus*. Having six eyes.

Most animals are binocular, spiders octonocular, and some *senocular*. *Derham's Physico-Theology.*

**SENOGALLIA, or SENA**, an ancient town of Italy, in Umbria, on the Adriatic; built by the Galli Senones. A. U. C. 396.

**SENONES**, in ancient history and geography, a people of Gallia Celtica, situated on the Sequana to the south of the Parisii, near the confluence of the Jeavana or Yonne with that river. Their most considerable exploit was their invasion of Italy, and taking and burning of Rome. See **ROME**. This was done by a colony of them long before transported into Italy, and settled on the Adriatic. Their chief towns in Italy were Sena, Pisaurum, Ariminum, and Fa-num Fortuneæ. Their capital Agendicum, in Gaul, was in the lower age called Senones, now Sens. In Italy, the Senones extended themselves as far as the river Aesis; but were afterwards driven beyond the Rubicon, which became the boundary of Galla Cisalpina.—*Polybius, Strabo.*

**SENS**, a considerable town of France, in the department of the Yonne, situated on a hill watered by that river, and by the Vanne. It is the see of an archbishop, and to the college belongs a museum and library. It has manufactures of wool-lens, velvet, stockings, gloves, and leather; the trade consists in corn, wine, wool, coal, and hemp. Several ecclesiastical councils have been held here; among others that of 1140, in which the famous Abelard was condemned. It was taken by an allied force, chiefly Austrian, on the 11th of February, 1814, but evacuated soon after. Thirty-four miles west of Troyes, and eighty-four south-east of Paris.

**SENSE, n. s.**  
**SENSA'TION,**  
**SENS'ED, adj**  
**SENSE'FUL,**  
**SENSE'LESS,**  
**SENSE'LESSLY, adv.**  
**SENSE'LESSNESS, n. s**  
**SENSIBIL'ITY,**  
**SENS'IBLE, adj.**  
**SENS'IBleness, n. s.**  
**SENS'IBLY, adv.**  
**SENS'ITIVE, adj.**  
**SENS'ITIVELY, adv.**  
**SENSO'RIUM, n. s.**  
**SENS'ORY,**  
**SENSU'OUS, adj.**

Fr. *sens*; Lat. *sen-sus*. Faculty or power by which external objects are perceived; perception of such objects; hence intellectual perception; apprehension; understanding; reason; consciousness; hence also, meaning; import: sensation is, perception by means of the senses; hence mental emotion; sensed (obsolete), perceived by the senses: sensible, reasonable, judicious (also disused): senseless, wanting sense of any kind; ignorant; stupid; unreasonable: the adjective and adverb corresponding: sensibility is quickness or delicacy of sensation; delicate perception: sensible, having the use of the senses or power of perception by them; perceptible by the senses or by the mind; perceiving by the mind or senses; having moral or intellectual perception; convinced, persuaded; judicious; wise: the noun substantive and adverb following correspond: sensitive is having sense or perception as distinct from reason; the adverb corresponding: the sensorium or sensory is the seat of sense, or that part of the body whence the senses transmit the perceptions to the mind: sensuous is tender; pathetic; (used only by Milton).

This Basilius, having the quick *sense* of a lover, took as though his mistress had given him a secret reprobation. *Sidney.*

The charm and venom which they drunk,  
Their blood with secret filth infected hath,  
Being diffused through the *senseless* trunk,  
That through the great contagion direful deadly  
stunk. *Faerie Queene.*

In this *sense*, to be preserved from sin is not impossible. *Hooker.*

Endless and *senseless* effusions of indigested prayers oftentimes disgrace, in most unsufferable manner, the worthiest part of Christian duty towards God. *Id.*

By reason man attaineth unto the knowledge of things that are and are not *sensible*: it resteth, therefore, that we search how man attaineth unto the knowledge of such things unsensible as are to be known. *Id.*

That church of Christ, which we properly term his body mystical, can be but one; neither can that one be *sensibly* discerned by any, inasmuch as the parts thereof are some in heaven already with Christ. *Id.*

Would your cambrick were as *sensible* as your finger, that you might leave pricking it for pity. *Shakspeare.*

If thou wert *sensible* of courtesy, I should not make so great a shew of zeal. *Id.*

The *sensibleness* of the eye renders it subject to pain, as also unfit to be dressed with sharp medicaments. *Id.*

He should have lived, Save that his riotous youth, with dangerous *sense*, Might in the times to come have ta'en revenge. *Id.*

My hearty friends, You take me in too dolorous a *sense*. *Id.*

You blocks! you worse than *senseless* things! *Id.*  
He is your brother, lords; *sensibly* fed  
Of that self-blood that first gave life to you. *Id.*

These be those discourses of God, whose effects  
those that live witness in themselves; the *sensible* in  
their *sensible* natures, the reasonable in their reasonable  
souls. *R. deigh.*

Spiritual species, both visible and audible, will  
work upon the *sensories*, though they move not any other body. *Bacon.*

In a living creature, though never so great, the  
*sense* and the effects of any one part of the body in-  
stantly make a transursion throughout the whole. *Id.*

*Id. Bacon's Natural History.*

This color often carries the mind away, yea, it  
deceiveth the *sense*; and it seemeth to the eye a  
shorter distance of way, if it be all dead and con-  
tinued, than if it have trees or buildings, or any  
other marks whereby the eye may divide it. *Bacon.*

Though things *sensible* be numberless,  
Yet only five the *senses*' organs be! *Id.*

And in those five all things their forms express,  
Which we can touch, taste, feel, or hear, or see. *Davies.*

If we had nought but *sense*, then only they  
Should have sound minds which have their *senses*  
sound; *Id.*

But wisdom grows when *senses* do decay,  
And folly most in quickest *sense* is found. *Id.*

To draw Mars like a young Hippolitus, with an  
effeminate countenance, or that hot-spurred Harpa-  
cie in Virgil, proceedeth from a *senseless* and over-  
cold judgment. *Peacham.*

The brain, distempered by a cold, beating against  
the root of the auditory nerve, and protracted to the  
tympanum, causes the *sensation* of noise. *Harrey on Consumption.*

If we be not extremely foolish, thankless, or *sense-*  
*less*, a great joy is more apt to cure sorrow than a  
great trouble is. *Taylor.*

Some balances are so exact as to be *sensibly*  
tuned with the eightieth part of a grain. *Wilkins's Math. Magic.*

They would repent this their *senseless* perverseness  
when it would be too late, and when they found  
themselves under a power that would destroy them.  
*Clarendon.*

Both contain  
Within them every lower faculty  
Of *sense*, whereby they hear, see, smell, touch, taste. *Milton.*

God, to remove his ways from human *sense*,  
Placed heaven from earth so far. *Id.*

All before Richard I. is before time of memory,  
and what is since, is, in a legal *sense*, within the time  
of memory. *Hale.*

Diversity of constitution, or other circumstances,  
vary the *sensations*; and to them of Java pepper is  
cold. *Glanville's Scepsis.*

Let the sciolist tell me, why things must be  
so as his individual *senses* represent them; is he sure  
that objects are not otherwise *sensed* by others, than  
they are by him? And why must his *sense* be the  
infallible criterion? It may be, what is white to us,  
is black to negroes. *Id.*

A blind man conceives not colours, but under the  
notion of some other *sensible* faculty. *Id.*

The space left and acquired in every *sensible* mo-  
ment in such slow progressions, is so inconsiderable,  
that it cannot possibly move the *sense*. *Id.*

I speak my private but impartial *sense*,  
With freedom, and, I hope, without offence. *Roscommon.*

A haughty presumption, that because we are on-  
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couraged to believe that in some *sense* all things are  
made for man, that therefore they are not made at  
all for themselves. *More.*

In one *sense* it is, indeed, a building of gold and  
silver upon the foundation of Christianity. *Tillotson.*

The great design of this author's book is to prove  
this, which I believe no man in the world was ever  
so *senseless* as to deny. *Id.*

Of the five *senses* two are usually and most properly  
called the *senses* of learning, as being most capable  
of receiving communication of thought and notions  
by selected signs: and these are hearing and seeing. *Holder's Elements of Speech.*

Idleness was punished by so many stripes in pub-  
lic, and the disgrace was more *sensible* than the pain. *Temple.*

A sudden pain in my right foot increased *sensibly*. *Id.*

All the actions of the *sensitive* appetite are in  
painting called passions, because the soul is agitated  
by them, and because the body suffers and is *sensibly*  
altered. *Dryden.*

Even I, the bold, the *sensible* of wrong,  
Restrained by shame, was forced to hold my tongue. *Id.*

Such is the mighty swiftness of your mind,  
That, like the earth's, it leaves the *sense* behind. *Id.*

In the due *sense* of my want of learning, I only  
make a confession of my own faith. *Id.*

The wretch is drenched too deep;  
His soul is stupid, and his heart asleep,  
Fattened in vice; so callous and so gross,  
He sins and sees not, *senseless* of his loss. *Id.*

Some are so hardened in wickedness as to have no  
*sense* of the most friendly offices. *L'Estrange.*

I do not say there is no soul in man because he is  
not *sensible* of it in his sleep; but I do say he cannot  
think at any time, waking or sleeping, without being  
*sensible* of it. *Locke.*

Other creatures, as well as monkeys, little wiser  
than they, destroy their young by *senseless* fondness  
and too much embracing. *Id.*

If any one should be found so *senselessly* arrogant  
as to suppose man alone knowing and wise, and but yet  
the product of mere ignorance and chance, and that all  
the rest of the universe acted only by that blind hap-  
hazard, I shall leave with him that very rational and  
emphatical rebuke of Tully. *Id.*

This great source of most of the ideas we have de-  
pending wholly upon our *senses*, and derived by them  
to the understanding, I call *sensation*. *Id.*

Vegetables have many of them some degrees of  
motion, and, upon the different application of other  
bodies to them, do very briskly alter their figure and  
motion, and so have obtained the name of *sensitive*  
plants, from a motion which has some resemblance to  
that which in animals follows upon *sensation*. *Id.*

Bodies are such as are endued with a vegetative  
soul, as plants; a *sensitive* soul, as animals; or a  
rational soul, as the body of man. *Ray.*

The *sensitive plant* is so called because, as soon as  
you touch it, the leaf shrinks. *Mortimer.*

The *senselessness* of the tradition of the crocodile's  
moving his upper jaw, is plain, from the articulation of  
the occiput with the neck, and the nether jaw with  
the upper. *Grew.*

Men, otherwise *sensitive* and ingenious, quote such  
things out of an author as would never pass in con-  
versation. *Norris.*

It is a *senseless* thing, in reason, to think that one  
of these interests can stand without the other, when,  
in the very order of natural causes, government is  
preserved by religion. *South's Sermons.*

The *senseless* grave feels not your pious sorrows. *Rouse.*

We name the *sensitive*, should move and feel ?  
Whence know her leaves to answer her command,  
And with quick horror fly the neighbouring hand ?

*Prior.*

She saw her favour was misplaced ;  
The fellows had a wretched taste ;  
She needs must tell them, to their face,  
They were a *senseless* stupid race. *Swift.*

**SENSES.** The internal organs of the five senses—seeing, hearing, feeling, smelling, and tasting—are the nerves, small, thread-like fibres, distributed all over the body, and all connected with the brain. (See *Nerves*.) Few subjects, in comparative anatomy and physiology, have given rise to more various and contradictory opinions than the external organs of sense in some classes. Much misunderstanding on this point has arisen from the hasty application of inferences drawn from the human subject to other animals. Thus it has been supposed that those which possess a tongue must have it for the purpose of tasting, and that the sense of smell must be wanting where we are unable to trace the existence of a nose. But, in many instances, the tongue cannot, from its substance and mechanism, be considered as an organ of taste, and must be merely subservient to the ingestion and deglutition of food; while in many animals, particularly insects, an acute sense of smell seems to exist, although no part can be pointed out in the head which analogy would justify us in describing as the nose. The sense of touch appears to exist only in four classes of animals, in most mammalia, in a few birds, in serpents, and probably in insects; and although all animals may possess that feeling which makes them sensible to the impressions of warmth and cold, very few possess, like the human subject, organs exclusively appropriated to the sense of touch, and expressly constructed for the purpose of feeling, examining, and exploring the qualities of external objects. (See *Touch*.) The sense of taste, as we have above remarked, does not appear to be confined to the tongue, that member being wanting in many animals which do not seem destitute of the sense; and in many which possess it, the tongue is employed for other and different purposes. (See *Taste*.) The sense of smelling prevails much more extensively in the animal kingdom than that of taste, since it not only assists several genera in selecting their food, which they have not afterwards the power of tasting, but is also of service in finding out proper objects for the satisfaction of their sexual appetites. (See *Smell*.) We should naturally expect to find an organ of hearing in most classes of animals, when we consider the various services which this sense performs, as that of indicating the approach of danger, of conducting beasts of prey to their food, &c.; and even in those animals, in which no external organ of hearing is discoverable, the sense is evidently not wanting. (See *Ear*, and *Hearing*.) The power of vision is confined to those animals which are provided with eyes for the reception of the images of external objects. Some species, even of the higher orders, are destitute of the organ of vision, which is also entirely wanting

in the lower classes of the animal creation. (See *Eye*, and *Optics*.) It is by the senses that the mysterious communication between the spiritual soul and the external world of being is kept up. The manner in which this is done, is unknown to us; we can trace the operation of outward matter, upon the organized material system, a few steps; but we soon lose sight even of these vestiges, and are obliged to acknowledge our ignorance of the workings of our own frame. We cannot give even a sketch of the speculations of philosophers on this subject, on which the history of philosophy, in fact, chiefly turns.

**SENSE, COMMON,** is a term that has been variously used both by ancient and modern writers. With some it has been synonymous with public sense; with others it has denoted prudence; in certain instances it has been confounded with some of the powers of taste; and, accordingly, those who commit egregious blunders with regard to decorum, saying and doing what is offensive to their company, and inconsistent with their own character, have been charged with a defect in common sense. Some men are distinguished by an uncommon acuteness in discovering the characters of others; and this talent has been sometimes called common sense; similar to which is that use of the term which makes it to signify that experience and knowledge of life which is acquired by living in society. To this meaning Quintilian refers, speaking of the advantages of a public education, lib. i. cap. 2. But the term common sense hath in modern times been used to signify that power of the mind which perceives truth, or commands belief, not by progressive argumentation, but by an instantaneous, instinctive, and irresistible impulse; derived neither from education nor from habit, but from nature; acting independently of our will whenever its object is presented, according to an established law, and therefore called sense; and acting in a similar manner upon all, or at least upon a great majority of mankind, and therefore called common sense. See *METAPHYSICS*, and *MORAL PHILOSOPHY*.

**SENSE, MORAL,** is a determination of the mind to be pleased with the contemplation of those affections, actions, or characters, of rational agents, which we call good or virtuous. This moral sense of beauty in actions and affections may appear strange at first view; some of our moralists themselves are offended at it in lord Shaftesbury, as being accustomed to deduce every approbation or aversion from rational views of interest. It is certain that his lordship has carried the influence of the moral sense very far, and some of his followers have carried it further. The advocates for the selfish system seem to drive their opinions to the opposite extreme, and we have elsewhere endeavoured to show that the truth lies between the contending parties. See *MORAL PHILOSOPHY*.

**SENSE, PUBLIC,** is defined by the noble author of the *Characteristics* to be an innate propensity to be pleased with the happiness of others, and to be uneasy at their misery. It is found, he says, in a greater or less degree in all men, and was sometimes called *κοντορόγενα*, or *sensus communis*, by ancient writers. Of the reality of this

public sense, we have great doubts. The conduct of savages, who are more under the influence of original instinct than civilised men, gives no countenance to it. Their affections seem all to be selfish, or to spring from self-love variously modified. For the happiness of their wives they have very little regard; considering them merely as instruments of their own pleasure, and valuing them for nothing else. Hence they make them toil, while they themselves indulge in listless idleness. To their children, we believe, they exhibit strong symptoms of attachment, as soon as they derive assistance from them in war, or in the business of the chase; but, during the helpless years of infancy, the child is left by the selfish father wholly to the care and protection of its wretched mother; who, impelled by the storgé of all females to their young, cherishes her offspring with great fondness. The savage is, indeed, susceptible of strong attachments, similar to that which we call friendship; but such attachments are no proofs of disinterested benevolence, or what his lordship calls the public sense. Two barbarous heroes are probably first linked together by the observation of each other's prowess in war, or their skill in pursuing their game; for such observations cannot fail to show them that they may be useful to one another; and we have elsewhere shown how real friendship may spring from sentiments originally selfish. The savage is very much attached to his horde or tribe, and this attachment resembles patriotism; but patriotism itself is not a sentiment of pure benevolence, delighting in the happiness of others and grieving at their misery: for the patriot prefers his own country to all others, and is not very scrupulous with respect to the rectitude of the means by which he promotes its interest, or depresses its rivals. Witness Cato, whose patriotic attachment to his own country was equalled or exceeded by his vindictive malice against the Carthaginians. See CATO. The savage pursues with relentless rigor the enemies of himself, or the tribe to which he belongs; shows no mercy to them when in his power, but puts them to the cruellest death, and carries their scalps to the leader of his party. These facts, which cannot be controverted, are perfectly irreconcileable with innate benevolence, or a public sense, comprehending the whole race of men; and show the truth of that theory by which we have in another place endeavoured to account for all the passions, social as well as selfish. See MORAL PHILOSOPHY.

SENSIBILITY, is a nice and delicate perception of pleasure or pain, beauty or deformity. It is very nearly allied to taste; and, as far as it is natural, seems to depend upon the organization of the nervous system. It is capable, however, of cultivation, and is experienced in a much higher degree in civilised than in savage nations, and among persons liberally educated than among boors and illiterate mechanics. He who has been long accustomed to that decorum of manners which characterises the polite part of the world, perceives almost instantaneously the smallest deviation from it, and feels himself almost as much hurt by behaviour harmless in itself, as by the grossest rudeness; and the man

who has long proceeded steadily in the paths of virtue, and often reflected on the deformity of vice, and the miseries of which it is productive, is more quickly alarmed at any deviation from rectitude, than another who, though his life has been stained by no crime, has yet thought less upon the principles of virtue and consequences of vice. That sensibility which we either have from nature, or necessarily acquire, of the miseries of others, is of the greatest use when properly regulated, as it powerfully impels us to relieve their distress; but, if it by any means becomes so exquisite as to make us shun the sight of misery, it counteracts the end for which it was implanted in our nature, and only deprives us of happiness, while it contributes nothing to the good of others. Indeed there is reason to believe that all such extreme sensibilities are selfish affectations, employed as apologies for with-holding from the miserable that relief which it is in our power to give; for there is not a fact better established in the science of human nature, than that passive perceptions grow gradually weaker by repetition, while active habits daily acquire strength. It is every man's duty to cultivate his moral sensibilities, so as to make them subservient to the purposes for which they were given to him; but if he either feel, or pretend to feel, the miseries of others to so exquisite a degree as to be unable to afford them the relief which they have a right to expect, his sensibilities are perverted. That the man of true sensibility has more pains and more pleasures than the callous wretch, is universally admitted, as well as that his enjoyments and sufferings are more exquisite in their kinds; but as no man lives for himself alone, no man will acknowledge his want of sensibility, or express a wish that his heart were callous. See PHYSIOLOGY.

SENSITIVE PLANT. See DIONEA, HEDYSARUM, and MIMOSA. The sensitive plants are well known to possess a kind of motion, by which the leaves and stalks are contracted and fall down upon being slightly touched, or shaken with some degree of violence. The contraction of the leaves and branches of the sensitive plant when touched is a very singular phenomenon. Different hypotheses have been formed by botanists to explain it; but these have generally been deduced rather from analogical reasoning than from a collection of facts and observations. The following are the most important facts collected upon this curious subject. 1. It is difficult to touch the leaf of a healthy sensitive plant so delicately that it will not immediately collapse, the foliola or little leaves moving at their base till they come into contact, and then applying themselves close together. If the leaf be touched with a little more force, the opposite leaf will exhibit the same appearance. If a little more force be applied the partial foot-stalks bend down towards the common foot-stalk from which they issue, making with it a more acute angle than before. If the touch be more violent still, all the leaves situated on the same side with the one that has been touched will instantly collapse, and the partial foot-stalk will approach the common foot-stalk to which it is attached, in the same manner as the partial foot-stalk of the leaf approaches the

stem or branch from which it issues ; so that the hole plant, from having its branches extended, will immediately appear like a weeping willow. 2. These motions of the plant are performed by means of three distinct and sensible articulations. The first, that of the foliola or lobes to the partial foot-stalk ; the second, that of the partial foot-stalk to the common one ; the third, that of the common foot-stalk to the trunk. The primary motion of all is the closing of the leaf upon the partial footstalk, which is performed in a similar manner, and by a similar articulation. This, however, is much less visible than the others. These motions are wholly independent on one another. 3. Winds and heavy rains make the leaves of the sensitive plant contract and close ; but no such effect is produced from slight showers. 4. At night, or when exposed to much cold in the day, the leaves meet and close in the same manner as when touched, folding their upper surfaces together, and in part over each other, like scales or tiles, so as to expose as little as possible of the upper surface to the air. The opposite sides of the foliola or leaves do not come close together in the night, for when touched they apply themselves closer together. Dr. Darwin kept a sensitive plant in a dark place for some hours after day-break ; the leaves and foot-stalks were collapsed as in its most profound sleep ; and on exposing it to the light above twenty minutes passed before it was expanded. 5. In August a sensitive plant was carried in a pot out of its usual place into a dark cave, the motion that it received in the carriage shut up its leaves, and they did not open till twenty-four hours afterwards ; at this time they became moderately open, but were afterwards subject to no changes at night or morning, but remained three days and nights with their leaves in the same moderately open state. At the end of this time they were brought out again into the air, and there recovered their natural periodical motions, shutting every night, and opening every morning as naturally and as strongly as if the plant had not been in this forced state ; and while in the cave it was observed to be very little less affected with the touch than when abroad in the open air. 6. The great heats of summer, when there is open sunshine at noon, affect the plant in some degree like cold, causing it to shut up its leaves a little, but never in any very great degree. The plant, however, is least of all affected about 9 A. M., and that is consequently the most proper time to make experiments on it. A branch of the sensitive plant cut off, and laid by, retains yet its property of shutting up and opening in the morning for some days ; and it holds it longer if kept with one end in water, than if left to dry more suddenly. 7. The leaves only of the sensitive plant shut up in the night, not the branches ; and if it be touched at this time the branches are affected in the same manner as in the day, shutting up, or approaching to the stalk or trunk, in the same manner, and often with more force. It is of no consequence what the substance is with which the plant is touched ; but there is a little spot, distinguishable by its paler color in the articulation of its leaves, where the greatest and newest sensibility is evidently placed. 8. Du

Hamel having observed, about the 15th of September, in moderate weather, the natural motion of a branch of a sensitive plant, remarked that at 9 A. M. it formed with the stem an angle of  $100^{\circ}$  ; at noon  $112^{\circ}$  ; at 3 P. M. it returned to  $100^{\circ}$  ; and after touching the branch the angle was reduced to  $90^{\circ}$ . Three-quarters of an hour after it had mounted to  $112^{\circ}$  ; and at 8 P. M. it descended again without being touched to  $90^{\circ}$ . The day after, in finer weather, the same branch, at 8 A. M., made an angle of  $135^{\circ}$  with the stem ; after being touched the angle was diminished to  $80^{\circ}$  ; an hour after it rose again to  $135^{\circ}$  ; being touched a second time it descended again to  $80^{\circ}$  ; an hour and a half after it had risen to  $145^{\circ}$  ; and upon being touched a third time descended to  $135^{\circ}$  ; and remained in that position till 5 P. M. when, being touched a fourth time, it fell to  $110^{\circ}$ . 9. The parts of the plant which have collapsed afterwards unfold themselves, and return to their former expanded state. The time required for that purpose varies according to the vigor of the plant, the season of the year, the hour of the day, the state of the atmosphere. Sometimes half an hour is requisite, sometimes only ten minutes. The order in which the parts recover themselves varies in like manner ; sometimes it is the common foot-stalk ; sometimes the rib to which the leaves are attached ; and sometimes the leaves themselves are expanded before the other parts have made any attempt to recover their former position. 10. If, without shaking the other smaller leaves, we cut off the half of a leaf or lobe belonging to the last pair, at the extremity or summit of a wing, the leaf cut, and its antagonist, that is to say, the first pair, begin to approach each other ; then the second, and so on successively, till all the lesser leaves, or lobes of that wing, have collapsed in like manner. Frequently, after twelve or fifteen seconds, the lobes of the other wings, which were not immediately affected by the stroke, shut ; whilst the stalk and its wing, beginning at the bottom, and proceeding in order to the top, gradually recover themselves. If, instead of one of the lesser extreme leaves, we cut off one belonging to the pair that is next the foot-stalk, its antagonist shuts, as do the other parts successively, from the bottom to the top. If all the leaves of one side of a wing be cut off, the opposite leaves are not affected, but remain expanded. With some address it is possible even to cut off a branch without hurting the leaves, or making them fall. The common foot-stalk of the winged leaves being cut as far as three-fourths of its diameter, all the parts which hang down collapse, but quickly recover without appearing to have suffered any considerable violence by the shock. An incision being made into one of the principal branches, to the depth of half the diameter, the branches betwixt the section and the root will fall down ; those above the incision remain as before, and the lesser leaves continue open ; but this direction is soon destroyed by cutting off one of the lobes at the extremity. A whole wing being cut off with precaution, near its insertion into the common foot-stalk, the other wings are not affected by it, and its own lobes do not shut. No motion ensues from piercing the branch with a needle or

other sharp instrument. 11. If the end of one of the leaves be burned with the flame of a candle, or by a burning glass, or by touching it with hot iron, it closes up in a moment, and the opposite leaf does the same, and after that the whole series of leaves on each side of the partial or little foot-stalk; then the foot-stalk itself; then the branch or common foot-stalk; all do the same if the burning has been in a sufficient degree. This proves that there is a very nice communication between all the parts of the plant, by means of which the burning, which only is applied to the extremity of one leaf, diffuses its influence through every part of the shrub. If a drop of aquafortis be carefully laid upon a leaf of the sensitive plant, so as not to shake it in the least, the leaf does not begin to move till the acrid liquor corrodes the substance of it; but at that time not only that particular leaf, but all the leaves placed on the same foot-stalk, close themselves up. The vapor of burning sulphur has also this effect on many leaves at once, according as they are more or less exposed to it; but a bottle of very acrid and sulphureous spirit of vitriol, placed under the branches unstopped, produces no such effect. Wetting the leaves with spirit of wine has been observed also to have no effect, nor the rubbing oil of almonds over them; though this last application destroys many plants. From the preceding experiments the following conclusions may be fairly drawn: 1. The contraction of the parts of the sensitive plant is occasioned by an external force, and the contraction is in proportion to the force. 2. All bodies which can exert any force affect the sensitive plant; some by the touch or by agitation, as the wind, rain, &c.; some by chemical influence, as heat and cold. 3. Touching or agitating the plant produces a greater effect than an incision or cutting off a part, or by applying heat or cold. Attempts have been made to explain these curious phenomena. Dr. Darwin, in the notes to his admired poem entitled the Botanic Garden, lays it down as a principle, that 'the sleep of animals consists in a suspension of voluntary motion; and, as vegetables are subject to sleep as well as animals, there is reason to conclude, says he, that the various action of closing their petals and foliage may be justly ascribed to a voluntary power; for without the faculty of volition sleep would not have been necessary to them.' Whether this definition of sleep when applied to animals be just, we shall not enquire; but it is evident that the supposed analogy between the sleep of animals and the sleep of plants has led Dr. Darwin to admit this astonishing conclusion, that plants have volition! As volition presupposes a mind or soul, it were to be wished that he had given us some information concerning the nature of a vegetable soul, which can think and will. We suspect, however, that this vegetable soul will turn out to be a mere mechanical or chemical one; for it is affected by external forces uniformly in the same way, its volition is merely passive, and never makes any successful resistance against those causes by which it is influenced. All this is a mere abuse of words. The sleep of plants is a metaphorical expression, and has not the least resemblance to the sleep of

animals. Plants are said to sleep when the flowers or leaves are contracted or folded together; but we never heard that there is any similar contraction in the body of an animal during sleep. See PHYSIOLOGY. The fibres of vegetables have been compared with the muscles of animals, and the motions of the sensitive plant have been supposed the same with muscular motion. Between the fibres of vegetables and the muscles of animals, however, there is not the least similarity. If muscles be cut through, so as to be separated from the joints to which they are attached, their powers are completely destroyed; but this is not the case with vegetable fibres. The following very ingenious experiment, which was communicated to us by a respectable member of the university of Edinburgh, is decisive on this subject. He selected a growing poppy, at that period of its growth, before unfolding, when the head and neck are bent down almost double. He cut the stalk where it was curved half through on the under side, and half through at a small distance on the upper side, and half through in the middle point between the two sections, so that the ends of the fibres were separated from the stalk. Notwithstanding these several cuttings on the neck, the poppy raised its head, and assumed a more erect position. There is, therefore, a complete distinction between muscular motion and the motions of a plant; for no motion can take place in the limb of an animal when the muscles of that limb are cut. If, fine, we look upon all attempts to explain the motions of plants as absurd, and all reasoning from supposed analogy between animals and vegetables as the source of wild conjecture, and not of sound philosophy. We view the contraction and expansion of the sensitive plant in the same light as we do gravitation, chemical attraction, electricity, and magnetism, as a singular fact, the circumstances of which we may be fully acquainted with, but must despair of understanding its cause. What has been said under this article chiefly refers to the *mimosa sensitiva* and *pudica*. For a full account of the motions of vegetables in general, see MOTION.

SENSITIVE PLANT, BASTARD. See *AESCHYNO-MENE*.

SENSORIUM, in anatomy. See ANATOMY.

SEN'SUAL, adj. Fr. *sensual*. Consisting SEN'SUALIST, n.s. } in sense; depending on SEN'SUALITY, } or affecting the senses; SEN'SUALIZE, v.a. } devoted to sense; affect-

SEN'SUALLY, adv. } ing the senses; lewd: all the derivatives follow these senses.

The greatest part of men are such as prefer their own private good before all things, even that good which is *sensual* before whatever is most divine.

*Hooker.*

But you are more intemperate in your blood  
Than Venus, or those pampered animals  
That rage in savage *sensuality*. *Shakspeare.*

Kill not her quickening power with surfeiting;  
Mar not her sense with *sensuality*;

Cast not her serious wit on idle things;  
Make not her free-will slave to vanity. *Dunciæ.*

From amidst them rose

Belial, the dissolutest spirit that fell;

The *sensuallest*, and after Asmodai

*Milton.*

Men in general are too partial in favour of a *sensual* appetite, to take notice of truth when they have found it.

L'Estrange.  
Let atheists and *sensualists* satisfy themselves as they are able; the former of which will find, that, as long as reason keeps her ground, religion neither can nor will lose hers.

*Sensuality* is one kind of pleasure, such an one as it is.

*Id.*  
They avoid dress, lest they should have affections tainted by any *sensuality*, and diverted from the love of him who is to be the only comfort and delight of their whole beings.

Addison.  
No small part of virtue consists in abstaining from that wherein *sensual* men place their felicity.

*Attbury.*

Impure and brutal *sensuality* was too much confirmed by the religion of those countries, where even Venus and Bacchus had their temples.

Bentley.

Far as creation's ample range extends, The scale of *sensual*, mental powers ascends. Pope.

Not to suffer one's self to be *sensualized* by pleasures, like those who were changed into brutes by Circe.

*Id.*

**SENTENCE, n.s. & v.u.** Fr. *sentence* ; Latin *sententia*.

**SEN'TENTIOSITY,** Determination or **SEN'TENTIOUS, adj.**

**SEN'TENTIOUSLY, adv.** decision ; legal

**SEN'TENTIOUSNESS, n.s.** decision or doom ;

maxim ; short paragraph or period : sententiousness is comprehension in a sentence : sententious, abounding in maxims or proverbs ; comprising sentences : the adverb and noun substantive corresponding.

Now also will I give sentence against them.

*Jeremiah iv. 12.*

An excellent spirit, knowledge, understanding, and shewing of hard sentences were found in Daniel. *Dan. v. 12.*

If we have neither voice from heaven, that so pronounceth of them, neither sentence of men grounded upon such manifest and clear proof, that they, in whose hands it is to alter them, may likewise infallibly, even in heart and conscience, judge them so : upon necessity to urge alteration, is to trouble and disturb without necessity.

*Hooker.*

After this cold considerance sentence me ; And, as you are a king, speak in your state, What I have done that misbecame my place.

*Shakspeare.*

He is very swift and *sententious*.

*Id. As You Like It.*

By the consent of all laws, in capital causes, the evidence must be full and clear ; and if so, where one man's life is in question, what say we to a war, which is ever the sentence of death upon many ?

*Bacon's Holy War.*

They describe her in part finely and elegantly, and in part gravely and *sententiously* : they say, look how many feathers she hath, so many eyes she hath underneath.

*Id. Essays.*

Eyes are vocal, ears have tongues :

*Sententious showers ! O let them fall !*

Their cadence is rhetorical.

*Crashaw*

What rests but that the mortal sentence pass ?

*Milton*

Came the mild judge and intercessor both To sentence man.

*Id.*

Vulgar precepts in morality carry with them nothing above the line, or beyond the extemporary *sententiousness* of common conceits with us.

*Browne's Vulgar Errors.*

Eloquence, with all her pomp and charms, Foretold us useful and *sententious* truths. Waller.  
Idleness, sentenced by the decurions, was punished by so many stripes.

Could that decree from our brother come ? Nature herself is *sentenced* in your doom : Piety is no more.

*Dryden.*

The Medea I esteem for the gravity and *sententiousness* of it, which he himself concludes to be suitable to a tragedy.

*Id.*

The making of figures being tedious, and requiring much room, put men first upon contracting them, as by the most ancient Egyptian monuments it appears they did : next, instead of *sententious* marks, to think of verbal, such as the Chinese still retain.

*Grew's Cosmologia.*

If matter of fact breaks out with too great an evidence to be denied, why, still there are other lenitives, that friendship will apply, before it will be brought to the decretory rigours of a condemning sentence.

*South's Sermons.*

How he apes his sire, Ambitiously *sententious* !

*Addison's Cato.*

Let him set out some of Luther's works, that by them we pass sentence upon his doctrines.

*Attbury.*

A *sentence* may be defined a moral instruction couched in few words. *Browne's Notes on Odyssey.*

Nausicaa delivers her judgment *sententiously*, to give it more weight.

*Browne.*

**SENTENCE**, in grammar, denotes a period, or a set of words comprehending some perfect sense or sentiment of the mind. The business of pointing is to distinguish the several parts or members of sentences, so as to render the sense thereof as clear, distinct, and full as possible. See PUNCTUATION. In every sentence there are two parts necessarily required : a noun for the subject, and a definite verb ; whatever is found more than these two affects one of them, either immediately, or by the intervention of some other, whereby the first is affected. Again, every sentence is that consisting of one single subject and one finite verb. A compound sentence contains several subjects and finite verbs, either expressly or implicitly. A simple sentence needs no point or distinction ; only a period to close it : as, 'A good man loves virtue for itself.'—In such a sentence the several adjuncts affect either the subject or the verb in a different manner. Thus the word good expresses the quality of the subject, virtue the object of the action, and for itself, the end thereof. Now none of these adjuncts can be separated from the rest of the sentence ; for if one be why should not all the rest ? and, if all be, the sentence will be minced into almost as many parts as there are words. But if, several adjuncts be attributed in the same manner either to the subject or the verb, the sentence becomes compound, and is to be divided into parts. In every compound sentence as many subjects, or as many finite verbs as there are, either expressly or implied, so many distinctions may there be. Thus, 'My hopes, fears, joys, pains, all centre in you.' And thus, Catilina abiit, excessit, evasit, erupit. The reason of which pointing is obvious ; for as many subjects or finite verbs as there are in a sentence, so many members does it really contain. Whenever, therefore, there occur more nouns than verbs, or contrariwise, they are to be conceived as equal. Since, as every subject requires its

verbs, so every verb requires its subject, where-with it may agree ; excepting, perhaps, in some figurative expressions.

SENTICOSE (from sentis, a briar or bramble), the name of the thirty-fifth order in Linnaeus's fragments of a natural method, consisting of rose, bramble, and other plants, which resemble them in port and external structure. See BOTANY, Index.

SEN'TIENT, *adj.* Lat. *sentiens*. Perceiving ; having perception.

This acting of the *sentient* phantasy is performed by a presence of sense, as the horse is under the sense of hunger, and that, without any formal syllogism, presseth him to eat. *Hale.*

If the *sentient* be carried, passibus equis, with the body whose motion it would observe, supposing it regular, the remove is insensible.

*Glanville's Scepsis.*

SEN'TIMENT, *n. s.* Fr. *sentiment*. Thought ; notion ; opinion ; the sense or meaning of a composition ; a particular or striking thought.

The consideration of the reason why they are annexed to so many other ideas, serving to give us due *sentiments* of the wisdom and goodness of the sovereign Disposer of all things, may not be unsuitable to the main end of these enquiries. *Locke.*

Those who could no longer defend the conduct of Cato, praised the *sentiments*. *Dennis.*

One of differing *sentiments* would have drawn Luther over to his party. *Attberry.*

Alike to council or the assembly came, With equal souls and *sentiments* the same. *Pope.*

Thomas Tusser, who though he wrote in verse now almost unintelligible, was a very honest and a very sensible man, was a great friend to inclosures, and for this reason quoted by Blith and others in support of their concurring *sentiments* on this subject.

*Campb. Pol. Sure.*

There is nothing in itself valuable or despicable, desirable or hateful, beautiful or deformed ; but these attributes arise from the particular constitution and fabric of human *sentiment* and affection.

*Hume.*

SEN'TIMENT, according to lord Kames, is a term appropriated to such thoughts as are prompted by passion. It differs from a perception ; for a perception signifies the act by which we become conscious of external objects. It differs from consciousness of an internal action, such as thinking, suspending thought, inclining, resolving, willing, &c. And it differs from the conception of a relation among objects ; a conception of that kind being termed opinion.

SEN'TIMENTS, in poetry. To talk in the language of music, each person has a certain tone, to which every sentiment proceeding from it ought to be tuned with the greatest accuracy : which is no easy work, especially where such harmony ought to be supported during the course of a long theatrical representation. To reach such delicacy of execution, it is necessary that a writer assume the precise character and passion of the personage represented ; which requires an uncommon genius. But it is the only difficulty ; for the writer, who, annihilating himself, can thus become another person, need be in no pain about the sentiments that belong to the assumed character : these will flow without study, or even preconception ; and will fre-

quently be as delightfully new to himself as to his reader. But if a lively picture even of a single emotion require an effort of genius, how much greater the effort to compose a passionate dialogue with as many different tones of passion as there are speakers ! With what ductility of feeling must that writer be endued, who approaches perfection in such a work ; when it is necessary to assume different and even opposite characters and passions in the quickest succession ! Yet this work, difficult as it is, yields to that of composing a dialogue in genteel comedy, exhibiting characters without passion. The reason is, that the different tones of character are more delicate, and less in sight, than those of passion ; and, accordingly, many writers, who have no genius for drawing characters, make a shift to represent, tolerably well, an ordinary passion in its simple movements. But of all works of this kind, what is truly the most difficult is a characteristical dialogue upon any philosophical or philological subject ; to interweave characters with reasoning, by suiting to the character of each speaker a peculiarity not only of thought but of expression, requires the perfection of genius, *tâzé*, and judgment. A deficiency in this leads a writer to convert himself into a spectator, so as to figure, in some obscure manner, an action as passing in his sight and hearing. In that figured situation, being led to write like a spectator, he entertains his readers with his own reflections, with cool description, and florid declamation ; instead of making them eye-witnesses, as it were, to a real event, and to every movement of genuine passion. Thus most of our plays appear to be cast in the same mould ; personages without character, the mere outlines of passion, a tiresome monotony, and a pompous declamatory style. Unhappy is the player of genius who acts a part in what may be termed a descriptive tragedy ; after assuming the very passion that is to be represented, how he is cramped in action, when he must utter, not the sentiments of the passion he feels, but a cold description in the language of a by-stander ! It is that imperfection, undoubtedly, in the bulk of our plays, which confines our stage almost entirely to Shakspeare, notwithstanding his many irregularities. In our late English tragedies, we sometimes find sentiments tolerably well adapted to a plain passion : but we must not in any of them expect a sentiment expressive of character ; and, upon that very account, our late performances of the dramatic kind are for the most part intolerably insipid. But it is proper to illustrate this subject by examples. The first examples shall be of sentiments that appear the legitimate offspring of passion ; to which shall be opposed what are descriptive only, and illegitimate ; and, in making this comparison, the instances shall be borrowed from Shakspeare and Corneille, who for genius in dramatic composition stand uppermost in the rolls of famo. I. Shakespeare shall furnish the first example, being of sentiments dictated by a violent and perturbed passion :—

*Lear.*

· Filial ingratitude !

Is it not as if this mouth should tear this hand  
For lifting food to't ?—But I'll punish home :  
No, I will weep no more. ————— In such a night.

To shut me out ! —— Pour on, I will endure.  
 In such a night as this ! O Regan, Goneril !  
 Your old kind father, whose frank heart gave all—  
 O ! that way madness lies ; let me shun that ;  
 No more of that. —— Act 3, sc. 3,

With regard to the French author, truth obliges us to acknowledge that he describes in the style of a spectator, instead of expressing passion like one who feels it; which naturally betrays him into a pompous declamatory style. It is scarcely necessary to give examples, for he never varies from that tone. We shall, however, take two passages at a venture, to be confronted with the above. In the tragedy of *Cinna*, after the conspiracy was discovered, *Æmilie*, having nothing in view but racks and death to herself and her lover, receives a pardon from *Augustus*, attended with the brightest circumstances of magnanimity and tenderness. This is a lucky situation for representing the passions of surprise and gratitude in their different stages, which seem naturally to be what follow. These passions, raised at once to the utmost pitch, and being at first too big for utterance, must, for some moments, be expressed by violent gestures only; so soon as there is vent for words, the first expressions are broken and interrupted: at last, we ought to expect a tide of intermingled sentiments, occasioned by the fluctuation of the mind between the two different passions. *Æmilie* is made to behave in a very different manner: with extreme coolness she describes her own situation, as if she were merely a spectator; or rather the poet takes the task off her hands :—

Et je me rends, Seigneur, à ces hautes bontés ;  
 Je recouvre la vûe auprès de leurs clartés.  
 Je connais mon forfait qui me sembloit justice ;  
 Et ce que n'avoit pû la terreur du supplice,  
 Je sens naître en mon ame un repentir puissant,  
 Et mon cœur en secret me dit, qu'il y consent, &c.

Act 5, sc. 3.

So much in general upon the genuine sentiments of passion. We proceed to particular observations. And, first, passions seldom continue uniform any considerable time; they generally fluctuate, swelling and subsiding by turns, often in a quick succession, and the sentiments cannot be just unless they correspond to such fluctuation. Accordingly, a climax never shows better than in expressing a swelling passion; the following passage may suffice for an illustration:—

I would not be the villain that thou think'st  
 For the whole space that's in the tyrant's grasp,  
 And the rich earth to boot. *Macbeth*, act 4, sc. 4.

The following passage expresses finely the progress of conviction:—

Let me not stir nor breathe, lest I dissolve  
 That tender, lovely form, of painted air,  
 So like Almeria. Ha ! it sinks, it falls ;  
 I'll catch it ere it goes, and grasp her shade.  
 'Tis life ! 'tis warm ! 'tis she ! 'tis she herself !  
 It is Almeria ! 'tis, it is my wife !

*Mourning Bride*, act 2, sc. 6.

In the progress of thought, our resolutions become more vigorous as well as our passions:—

If ever I do yield or give consent,  
 By any action, word, or thought, to wed  
 Another lord, may then just heav'n shower down,  
 &c. *Mourning Bride*, act 1, sc. 1.

This leads to a second observation, That the different stages of a passion, and its different directions, from birth to extinction, must be carefully represented in their order, because otherwise the sentiments, by being misplaced, will appear forced and unnatural. Resentment, for example, when provoked by an atrocious injury, discharges itself first upon the author; sentiments therefore of revenge come always first, and must in some measure be exhausted before the person injured think of grieving for himself. See examples of this in the *Cid* of Corneille, act 1, sc. 7; the *Aminta* of Tasso, act 4, sc. 2, and the tragedy of *Jane Shore*, act 3, sc. 1. 3. A person sometimes is agitated at once by different passions; and the mind in that case, vibrating like a pendulum, vents itself in sentiments that partake of the same vibration.

*Queen.* Would I had never trod this English earth,  
 Or felt the flatteries that grow upon it !  
 Ye've angel's faces, but heav'n knows your hearts.  
 What shall become of me now ? wretched lady !  
 I am the most unhappy woman living.  
 Alas ! poor wenches, where are now your fortunes ?

[To her woman.

Shipwreck'd upon a kingdom, where no pity,  
 No friends, no hope, no kindred weep for me !  
 Almost no grave allowed me.

*Henry VIII.*, act 3, sc. 1.

*Æmilie.* Oh ! my good lord, I would speak a word with you.

*Othello.* Yes, 'tis *Æmilie*—By and by.—She's dead.

'Tis like she comes to speak of Cassio's death ;  
 The noise was high---Ha ! no more moving ?  
 Still as the grave. Shall she come in ? wer't good ?  
 I think she stirs again—No—what's the best ?  
 If she come in, she'll sure speak to my wife :  
 My wife ! my wife ! what wife ? I have no wife ;  
 Oh insupportable ! oh heavy hour ?

*Othello*, act 5, sc. 7.

4. A fourth observation is, That nature, which gave us passions, and made them extremely beneficial when moderate, intended undoubtedly that they should be subjected to the government of reason and conscience. It is therefore against the order of nature that passion in any case should take the lead in contradiction to reason and conscience: such a state of mind is a sort of anarchy which every one is ashamed of and endeavours to hide or dissemble. Even love, however laudable, is attended with a conscious shame when it becomes immoderate; it is covered from the world, and disclosed only to the beloved object :—

Et que l'amour souvent de remors combattu  
 Paroisse une foiblesse, et non une vertu.

*Boileau, l'Art Poet*, chant. 3, l. 101.

O, they love least that let men know they love.

*Two Gentlemen of Verona*, act 1, sc. 3.

Hence a capital rule in the representation of immoderate passions, that they ought to be hid or dissembled as much as possible. And this holds in a special manner with respect to criminal passions: one never counsels the commission of a crime in plain terms; guilt must not appear in its native colors, even in thought; the proposal must be made by hints, and by representing the action in some favorable light. Of the propriety

of sentiment upon such an occasion, Shakspere, in the Tempest, has given us a beautiful example, in a speech by the usurping duke of Milan, advising Sebastian to murder his brother the king of Naples :—

*Antonio.* —————— What might,  
Worthy Sebastian,—O, what might,—no more.  
And yet, methinks I see it in thy face  
What thou should'st be : the occasion speaks thee,  
and

My strong imagination sees a crown  
Dropping upon thy head.      *Act 2, sc. 2.*

A picture of this kind, perhaps still finer, is exhibited in king John, where that tyrant solicits (act 3, sc. 5.) Hubert to murder the young prince Arthur; but it is too long to be inserted here. II. As things are best illustrated by their contraries, we proceed to faulty sentiments, of which we shall quote examples from the most approved authors. The first class contains faulty sentiments of various kinds, which we shall endeavour to distinguish from each other. 1. Of sentiments that are faulty by being above the tone of the passion, the following is an example :—

*Othello.* —————— O my soul's joy !  
If after every tempest comes such calms,  
May the winds blow till they have waken'd death ;  
And let the laboring bark climb hills of seas  
Olympus high, and duck again as low  
As hell's from heaven !      *Othello, act 2, sc. 6.*

This sentiment may be suggested by violent and inflamed passion, but is not suited to the satisfaction, however great, that one feels upon escaping danger. 2. Instance of sentiments below the tone of the passion. Ptolemy, by putting Pompey to death, having incurred the displeasure of Casar, was in the utmost dread of being de-throned : in that agitating situation, Corneille makes him utter a speech full of cool reflection, that is in no degree expressive of the passion. See La Mort de Pompe, act 4, sc. 1. 3. Sentiments that agree not with the tone of the passion ; as where a pleasant sentiment is grafted upon a painful passion, or the contrary. In the following instances the sentiments are too gay for a serious passion :—

No happier task these faded eyes pursue ;  
To read and weep is all they now can do.

*Eloisa to Abelard, 1. 47.*

4. Sentiments too artificial for a serious passion. The first example is a speech of Percy expiring :—

O, Harry, thou hast robb'd me of my growth :  
I better brook the loss of brittle life,  
Than those proud titles thou hast won of me ;  
They wound my thoughts worse than thy sword my  
flesh.

But thought's the slave of life, and life time's fool ;  
And time, that takes survey of all the world  
Must have a stop.

*First Part, Henry IV., act 5, sc. 9.*

The sentiments of the Mourning Bride are for the most part no less delicate than just copies of nature. In the following exception the picture is beautiful, but too artful to be suggested by severe grief :—

*Almeria.* O no ! Time gives increase to my  
afflictions.  
The circling hours, that gather all the woes

Which are diffused through the revolving year,  
Come heavy laden with the oppressive weight  
To me ; with me, successively, they leave  
The sighs, the tears, the groans, the restless cares,  
And all the damps of grief, that did retard their  
flight ;

They shake their downy wings, and scatter all  
The dire collected dews on my poor head ;  
Then fly with joy and swiftness from me.

*Act 1, sc. 1.*

In the same play, Almeria seeing a dead body, which she took to be Alphonso's, expresses sentiments strained and artificial, which nature suggests not to any person upon such an occasion.

*See act 5, sc. 11.*

5. Fanciful or finical sentiments. Sentiments that degenerate into point or conceit, however they may amuse in an idle hour, can never be the offspring of any serious or important passion. In the Jerusalem of Tasso, Tancred, after a single combat, spent with fatigue and loss of blood, falls into a swoon ; in which situation, understood to be dead, he is discovered by Erminia, who was in love with him to distraction. A more happy situation cannot be imagined to raise grief in an instant to the highest pitch ; and yet, in venting her sorrow, she descends most abominably into antithesis and conceit even of the lowest kind. *See Canto 19, st. 105.*

Armida's lamentation respecting her lover Hinaldo is in the same vicious style. *See Canto 20, st. 124, 125, 126.*

*Queen.* Give me no help in lamentation ;  
I am not barren to bring forth complaints ;  
All springs reduce their currents to mine eyes,  
That I, being governed by the wat'ry moon,  
May send forth plenteous tears to drown the world,  
Ah for my husband, for my dear lord Edward.

*King Richard III, act 2, sc. 2.*

Jane Shore utters her last breath in a witty conceit :—

Then all is well, and I shall sleep in peace—  
'Tis very dark, and I have lost you now—  
Was there not something I would have bequeath'd  
you ?

But I have nothing left me to bestow,  
Nothing but one sad sigh. Oh mercy, Heav'n !

*[Dies.]*      *Act 5.*

Corneille, in his Examen of the Cid, answering an objection, that his sentiments are sometimes too much refined for persons in deep distress, observes that, if poets did not indulge sentiments more ingenious or refined than are prompted by passion, their performances would often be low, and extreme grief would never suggest but exclamations merely. This is to assert that forced thoughts are more agreeable than those that are natural, and ought to be preferred. 2. The second class is of sentiments that may belong to an ordinary passion, but are not perfectly concordant with it, as tinctured by a singular character. In the last act of that excellent comedy The Careless Husband, Lady Easy, upon Sir Charles's reformation, is made to express more violent and turbulent sentiments of joy than are consistent with the mildness of her character. *Lady Easy.*—O the soft treasure ! O the dear reward of long desiring love.—Thus I thus to have you mine is something more than happiness ; 'tis double life, and madness of abounding joy.

## SEN T I M E N T.

3. The following instances are descriptions rather than sentiments, which compose a third class. Of this descriptive manner of painting the passions there is in the Hippolytus of Euripides, act 5, an illustrious instance, viz. the speech of Theseus, upon hearing of his son's dismal exit. In Racine's tragedy of Esther, the queen, hearing of the decree issued against her people, instead of expressing sentiments suitable to the occasion, turns her attention upon herself, and describes with accuracy her own situation. *Juste ciel ! tout mon sang dans mes veines se glace.* Act 1, sc. 3.

4. The fourth class is of sentiments expressed too early or too late. The following, from Venice Preserved, act 5, at the close of the scene between Belvidera and her father Priuli, is of this class. The account given by Belvidera of the danger she was in, and of her husband's threatening to murder her, ought naturally to have alarmed her relenting father, and to have made him express the most perturbed sentiments. Instead of which, he dissolves into tenderness and love for his daughter, as if he had already delivered her from danger, as if there were a perfect tranquillity :—

I'll henceforth be indeed a father; never  
Never more thus expose, but cherish thee,  
Dear as the vital warmth that feeds my life,  
Dear as those eyes that weep in fondness o'er thee :  
Peace to thy heart.

5. Immoral sentiments exposed in their native colors, instead of being concealed or disguised, compose the fifth class. The Lady Macbeth, projecting the death of the king, has the following soliloquy :—

Come, all you spirits  
That lead on mortal thoughts, unsex me here,  
And fill me from the crown to the toe, top full  
Of direct cruelty; make thick my blood,  
Stop up the access and passage to remorse,  
That no compunctions visitings of nature  
Shake my fell purpose. *Macbeth*, act 1, sc. 7.

This speech is not natural. A treacherous murderer was never perpetrated even by the most hardened miscreant without compunction: and that the lady here must have been in horrible agitation appears from her invoking the infernal spirits to fill her with cruelty, and to stop up all avenues to remorse. But in that state of mind it is a never-failing artifice of self-deceit to draw the thickest veil over the wicked action, and to extenuate it by all the circumstances that imagination can suggest; and, if the crime cannot bear disguise, the next attempt is to thrust it out of the mind altogether, and to rush on to action without thought. This last was the husband's method :—

Strange things I have in head, that will to hand;  
Which must be acted ere they must be scann'd.

*Act 3, sc. 5.*

The lady follows neither of these courses, but in a deliberate manner endeavours to fortify her heart in the commission of an execrable crime, without even attempting to color it. This, we think, is not natural; we hope there is no such wretch to be found as is here represented. 6.

The last class comprehends sentiments that are unnatural, as being suited to no character nor passion. These may be subdivided into three branches :—1. Sentiments unsuitable to the constitution of man, and to the laws of his nature; 2. inconsistent sentiments; 3. sentiments that are pure rant and extravagance. When the fable is of human affairs, every event, every incident, and every circumstance, ought to be natural, otherwise the imitation is imperfect. But an imperfect imitation is a venial fault, compared with that of running cross to nature. In the Hippolytus of Euripides (act iv. sc. 5.) Hippolytus, wishing for another self in his own situation, ‘How much,’ says he, ‘should I be touched with his misfortune!’ as if it were natural to grieve more for the misfortune of another than for one's own.

*Osmyn.* Yet I beheld her—yet—and now no more.

Turn your light inward, eyes, and view my thought ;  
So shall you still behold her...’Twill not be.  
O impotence of sight! &c.

*Mourning Bride*, act 2, sc. 8.

No man in his senses ever thought of applying his eyes to discover what passes in his mind; far less of blaming his eyes for not seeing a thought or idea. In Molier's *l' Avare* (act iv. sc. 7) Harpagon, being robbed of his money, seizes himself by the arm, mistaking it for that of the robber. This is so absurd as scarce to provoke a smile, if it be not at the author. Of the second branch the following example may suffice :—

Now bid me run,  
And I will strive with things impossible,  
Yea, get the better of them.

*Julius Caesar*, act 2, sc. 3.

Of the third branch, take the following samples. Lucan, talking of Pompey's sepulchre, lib. vii. l. 798. According to Rowe's translation :—

Where there are seas, or air, or earth, or skies,  
Wher'er Rome's empire stretches, Pompey lies.  
If Fate decrees he must in Egypt lie,  
Let the whole fertile realm his grave supply.  
Yield the wide country to his awful shade,  
Nor let us dare on any part to tread,  
Fearful we violate the mighty dead !

This supposed omnipresence of Pompey's body is not only unnatural, but ridiculous. The following passages are pure rant. Coriolanus, speaking to his mother, says,

What is this?  
Your knees to me? to your corrected son?  
Then let the pebbles on the hungry beach  
Fillop the stars: then let the mutinous winds  
Strike the proud cedars 'gainst the fiery sun:  
Murd'ring impossibility, to make  
What cannot be, slight work!

*Coriolanus*, act. 5, sc. 3.

*Cæsar.*—Danger knows full well,  
That Cæsar is more dangerous than he,  
We were two lions litter'd in one day,  
And I the elder and more terrible.

*Julius Cæsar*, act. 2, sc. 4.

*Ventidius.* Fram'd in the very pride and boast of nature  
So perfect, that the gods who form'd you wonder'd  
At their own skill, and cry'd, A lucky hit  
Has mended our design. *Dryden*. *All for Love*, act .

Not to talk of the impiety of this sentiment, it is ludicrous instead of being lofty. The famous epitaph on Raphael is not less absurd than any of the foregoing passages :

Raphael, timuit, quo sospite, vinci,  
Rerum magna parens, et moriente mori.

Imitated by Pope, in his epitaph on Sir Godfrey Kneller :

Living, great Nature fear'd he might outvie  
Her works; and dying fears herself may die.

Such is the force of imitation: for Pope of himself would never have been guilty of a thought so extravagant.

**SENTIMENTAL**, from sentiment. Of or belonging to sentiments, in the last sense of the primitive word. This adjective, though in very general use, seems to have been almost overlooked by the lexicographers, much as we daily hear of sentimental plays, toasts, songs, and even journeys. See **SERNE**. Applied to a person, it signifies the being endued with the most refined and delicate sentiments; applied to a literary work, it implies that the work abounds with sentiments of that kind.

**SENTINEL**, *n.s.* Fr. *sentinelle*; from Lat. *sentio*. One who watches or keeps guard.

Norfolk, hie thee to thy charge;  
Use careful watch, chuse trusty *sentinels*.

*Shakspeare. Richard III.*

Counsellors are not commonly so united, but that one counsellor keepeth sentinel over another, so that, if any do counsel out of faction or private ends, it commonly goes to the king's ear.

*Bacon's Essays.*

First, the two eyes, which have the seeing power, Stand as one watchman, spy, or sentinel,

Being placed aloft, within the head's high tower; And, though both see, yet both but one thing tell.

*Davies.*

Love to our citadel resorts,  
Through those deceitful sally ports :  
Our *sentinels* betray our forts.

*Denham.*

Perhaps they had *sentinels* waking while they slept; but even this would be unsoldierlike.

*Browne.*

The senses are situated in the head, as *sentinels* in a watchtower, to receive and convey to the soul the impressions of external objects.

*Ray on the Creation.*

From afar

The watchdog bayed beyond the Tiber; and More near from out the Caesar's palace came The owl's long cry, and, interrupted, Of distant *sentinels* the fitful song Began and died upon the gentle wind.

*Byron.*

And, Sire, your limbs have need of rest, And I will be the *sentinel* Of this your troop.

*Id.*

**SENTINEL**, or **SENTRY**, from the Latin *sentio*, or the Italian *sentinella*, a private soldier, placed in some post, to watch the approach of the enemy, to prevent surprises, and to stop such as would pass without order, or being discovered who they are. Sentries are placed before the arms of all guards, at the tents and doors of general officers, colonels of regiments, &c. All sentries are to be vigilant on their posts; they are not, on any account, to sing, smoke tobacco, nor suffer any noise to be made near them. They are to have a watchful eye over the things

committed to their charge, not to suffer any light to remain, or any fire to be made near their posts in the night time; neither is any sentry to be relieved, or removed from his post, but by the corporal of the guard. They are not to suffer any one to touch or handle their arms, or in the night time to come within ten yards of their post.

No person is to strike or abuse a sentry on his post; but, when he has committed a crime, he is to be relieved, and then punished according to the rules and articles of war. A sentinel, on his post in the night, is not to know any body, but by the countersign; when he challenges, and is answered, relief, he calls out stand, relief; advance corporal! upon which the corporal halts his men, and advances alone within a yard of the sentry's firelock, first ordering his party to port arms, on which the sentry does the same, and gives him the same countersign, taking care that no one hears it.

**A RUNNING SENTINEL** is a sentry who is upon the look out, at an advanced post, or near the gates of a fortified place, and is not confined to a particular spot.

**SENTINEL PERDU**, a soldier posted near an enemy, or in some very dangerous post where he is in hazard of being lost.

**SENTINUM**, an ancient town of Italy, in Umbria, Liv. x. c. 27 and 30.

**SENTIUS** (Cneius), a Roman historian, who flourished in the reign of Alexander Severus. He wrote the history of Alexander's life in Latin, or, as others say, in Greek.

**SENTRY**, or } Corrupted, I believe, from

**SEN'TERY**, *n.s.* } sentinel, says Johnson; but there is in Ital. *sentare*, and Span. *sentar*. A watch; sentinel; one who watches in a garrison, or army, to keep them from surprise.

If I do send, dispatch  
Those *sentries* to our aid; the rest will serve  
For a short holding.

*Shakspeare. Coriolanus.*  
What strength, what art, can then  
Suffice, or what evasion bear him safe  
Through the strict *sentieries*, and stations thick  
Of angels watching round?

*Milton.*  
Thou, whose nature cannot sleep,  
O'er my slumbers *sentry* keep;

Guard me 'gainst those watchful foes,  
Whose eyes are open while mine close.

*Browne.*  
The youth of hell strict guard may keep,  
And set their *sentries* to the utmost deep.

*Dryden.*  
A goose they had, 'twas all they could allow,  
A wakeful *sentry*, and on duty now.

*Id.*  
Here toils and death, and death's half-brother,  
sleep,

Forms terrible to view, their *sentry* keep.

*Id.*  
**SEP'ARATE**, *v.a.*, *v.n.*, & } Fr. *separer*;

**SEPARABIL'ITY**, *n.s.* [adj.] Lat. *separo*. To break; divide

**SEP'ARABLE**, *adj.* into parts; se-

**SEP'ARABLENESS**, *n.s.* ver; set apart;

**SEP'ARATELY**, *adv.* withdraw: as a

**SEP'ARATENESS**, *n.s.* verb neuter, to

**SEP'ARATIST**, part; be divid-

**SEP'ATOR**, ed: as an ad-

**SEP'ARATORY**, *adj.* jective, divid-

ed; disjoined; secluded; disunited; disengaged

from body or matter: separability is the quality of admitting disunion or division: separable,

divisible; possibly to be disjoined from something else; the noun substantive corresponding: separately, separateness, and separation, follow the sense of separate as an adjective: a separatist is one who separates; a schismatic: separator, one who divides or makes a separation: separatory, used in, or conducive to, separation.

*Separate thyself from me: if thou wilt take the left, I will go to the right.* Gen. xiii. 9.

David *separated* to the service those who should prophesy. 1 Chron. xxv. 1.

*Separate* me Barnabas and Saul, for the work whereunto I have called them. Acts xiii. 2.

I'll to England.

—To Ireland, 1: our *separated* fortunes Shall keep us both the safer. Shakspeare. Macbeth.

Did you not hear

A buzzing of a *separation* Between the king and Catharine? Shakspeare.

It is of singular use to princes, if they take the opinions of their council both *separately* and together: for private opinion is more free, but opinion before others is more reserved. Bacon.

As the confusion of tongues was a mark of *separation*, so the being of one language was a mark of union. Id.

A fifteenth part of silver, incorporate with gold, will not be recovered by any matter of *separation*, unless you put a greater quantity of silver, which is the last refuge in *separations*. Id.

The anabaptists', *separatists'*, and sectaries' tenets are full of schisms, and inconsistent with monarchy. Id.

They have a dark opinion that the soul doth live after the *separation* from the body. Abbot.

Our modern *separatists* pronounce all those heretical, or carnal, from whom they have withdrawn.

*Decay of Piety.*

Death from sin no power can *separate*. Milton.

Eve *separate* he wished. Id.

*Separability* is the greatest argument of real distinction. Glanville.

Trials permit me not to doubt of the *separableness* of a yellow tincture from gold. Boyle.

Can a body be inflammable, from which it would puzzle a chemist to *separate* an inflammable ingredient? Id.

In a secret vale the Trojan sees

A *sep'rate* grove. Dryden.

If you admit of many figures, conceive the whole together; and not every thing *separately* and in particular. Id.

Expansion and duration have this farther agreement, that though they are both considered by us as having parts, yet their parts are not *separable* one from another. Locke.

When there was not room enough for their herds to feed, they by consent *separated*, and enlarged their pasture. Id.

Whatever ideas the mind can receive and contemplate without the help of the body, it can retain without the help of the body too, or else the soul, or any *separate* spirit, will have but little advantage by thinking. Id.

The greatest argument of real distinction is *separability* and actual *separation*; for nothing can be *separated* from itself. Norris.

Twere hard to conceive an eternal watch whose pieces were never *separate* one from another nor ever in any other form. Burnet's Theory of the Earth.

Says the *separatist*, if those who have the rule over you should command you any thing about church

affairs you ought not, in conscience, to obey them.

South's Sermons.

Earths are opake, insipid, and, when dried, friable, or consisting of parts easy to *separate*, and soluble in water; not disposed to burn, flame, or take fire. Woodward.

The infusions and decoctions of plants contain the most *separable* parts of the plants, and convey not only their nutritious but medicinal qualities into the blood. Arbuthnot.

The most conspicuous gland of an animal is the system of the guts, where the lacteals are the emissary vessels, or *separatory* ducts.

Cheyne's Philosophical Principles.

SEPHARVAIM, or SEPHARVITES, a tribe of the Samaritans, supposed by Calmet to be originally the Safpires on the north of Media; but by Dr. Gill natives of Sipporha in Syro-Phoenicia. They were partly cut off by the Assyrians; and the rest were transplanted into the land of Israel, after the overthrow of that king dom, and the captivity of the ten tribes.

SEPIA, the cuttle-fish, or ink-fish, a genus belonging to the order of vermes mollusca. There are eight brachia interspersed on the interior side with little round serrated cups, by the contraction of which the animal lays fast hold of any thing. Besides these eight arms, it has two tentacula longer than the arms, and frequently pendunculated. The mouth is situated in the centre of the arms, and is horny and hooked, like the bill of a hawk. The eyes are below the tentacula, towards the body of the animal. The body is fleshy, and received into a sheath as far as the breast. Their food are tunnies, sprats, lobsters, and other shell fish. With their arms and trunks they fasten themselves, to resist the motion of the waves. Their beak is like that of a parrot. The females are distinguished by two paps. They copulate as the polypi do, by a mutual embrace, and lay their eggs upon seaweed and plants, in parcels like bunches of grapes. Immediately after they are laid they are white, and the males pass over and impregnate them with a black liquor, after which they grow larger. On opening the egg, the embryo-cuttle is found alive. The males are very constant, accompany their females every where, face every danger in their defence, and rescue them intrepidly at the hazard of their own lives. The timorous females fly as soon as they see the males wounded. The noise of a cuttle-fish, on being dragged out of the water, resembles the grunting of a hog. When the male is pursued by the sea-wolf or other ravenous fish, he shuns the danger by stratagem. He squirts his black liquor, sometimes to the quantity of a dram, by which the water becomes black as ink, under shelter of which he baffles the pursuit of his enemy. This ink or black liquor has been denominated by M. le Cat æthiops animal, and is reserved in a particular gland. In its liquid state it resembles that of the choroid in man; and would then communicate an indelible dye; when dry, it might be taken for the product of the black liquor in negroes dried, and made a precipitate by spirit of wine. This æthiops animal in negroes, as well as in the cuttle-fish, is more abundant after death than even during life. It may serve either for

writing or printing; in the former of which ways the Romans used it. It is said to be an ingredient in the composition of Indian ink mixed with rice. There are five species:—1. *S. loligo*, the great cuttle, with short arms and long tentacula; the lower part of the body rhomboid and pinnated, the upper thick and cylindric. They inhabit all our seas, where, having blackened the water by the effusion of their ink, they abscond, and with their tail leap out of the water. They are gregarious, and swift in their motions: they take their prey by means of their arms, and, embracing it, bring it to their central mouth. They adhere to the rocks, when they wish to be quiescent, by means of the concave discs placed along their arms. 2. *S. media*, the middle cuttle, with a long slender cylindric body, tail finned, pointed, and carinated on each side; two long tentacula; the body almost transparent green, but convertible into a dirty brown; confirming the remark of Pliny, that they change their color through fear, adapting it, chameleon-like, to that of the place they are in. The eyes are large and smaragdine. 3. *S. octopodia*, the eight-armed cuttle. The arms are connected at their bottom by a membrane. This is the polypus of Pliny, which he distinguishes from the *loligo* and *sepia* by the want of the tail and tentacula. They inhabit our seas, but abound most in the Mediterranean. In hot climates these are found of an enormous size. The Indians affirm that some have been seen two fathoms broad over their centre, and each arm nine fathoms long. When the Indians navigate their little boats they go in dread of them; and, lest these animals should fling their arms over and sink them, they never sail without an axe to cut them off. When used for food they are served up red from their own liquor, which, from boiling with the addition of nitre, becomes red. Barthol says, upon cutting one of them open, so great a light broke forth, that at night, upon taking away the candle, the whole house seemed to be in a blaze. 4. *S. officinalis*, the officinal cuttle, with an ovated body, has fins along the whole of the sides, almost meeting at the bottom; and two long tentacula. The body contains the bone, the cuttle-bone of the shops, which was formerly used as an absorbent. The bones are frequently flung on all our shores; the animal very rarely. The conger eels bite off their arms or feet; but they grow again, as does the lizard's tail (Plin. ix. 20). They are preyed upon by the plaice. This fish emits (in common with the other species), when frightened or pursued, the black liquor which the ancients supposed darkened the circumambient wave, and concealed it from the enemy. The ancients sometimes made use of it instead of ink. Persius mentions this species in his description of the noble student. This animal was esteemed a delicacy by the ancients, and is eaten even at present by the Italians. Rondeletius gives us two receipts for the dressing. Athenaeus also gives the method of making an antique cuttle-fish sausage; and we learn from Aristotle that these animals are in highest season when pregnant. 5. *S. sepiola*, the small cuttle, with a short body rounded at the bottom, has a round fin on each

side and two tentacula. They are taken off Flintshire, but chiefly inhabit the Mediterranean.

SEPIARIE (from *sepes*, a hedge), the name of the forty-fourth order of Linnæus's Fragments of a Natural Method, consisting of a beautiful collection of woody plants, some of which, from their size and elegance, are very proper furniture for hedges. See BOTANY, Index.

SEPIAS, in ancient geography, a cape of Thessaly, now called St. George.

SEPS, in zoology. See LACERTA.

SEPT, n. s. Fr. *cep*; Lat. *septum*. A clan; race; family; generation. A word used chiefly with regard or allusion to Ireland.

This judge, being the lord's brehon, adjudgeth a better share unto the lord of the soil, or the head of that *sept*, and also unto himself for his judgment a greater portion, than unto the plaintiffs.

*Spenser on Ireland.*

The English forces were ever too weak to subdue so many warlike nations, or *septs* of the Irish, as did possess this island.

*Davies on Ireland.*

The true and ancient Russians, a *sept* whom he had met with in one of the provinces of that vast empire, were white like the Danes.

*Boyle.*

SEPTARIE, in the old system of mineralogy, a large class of fossils, named also *ludus Helmontii* and *waxen veins*. They were defined to be fossils not inflammable, nor soluble in water; of a moderately firm texture and dusky hue, divided by several septa or thin partitions, and composed of a sparry matter greatly debased by earth; not giving fire with steel; fermenting with acids, and in great part dissolved by them; and calcining in a moderate fire. Of this class were reckoned two distinct orders of bodies, and under these six genera. The first order were those which are usually found in large masses, of a simple uniform construction, but divided by large septa either into larger and more irregular portions, or into smaller and more equal ones called talc. The genera of this order are four: 1. Those divided by septa of spar, called *secoriae*. 2. Those divided by septa of earthy matter, called *gaiophragmia*. 3. Those divided by septa of the matter of the pyrites, called *pyritercia*. And, 4. Those divided by septa of spar, with an admixture of crystal, called *diaugophragmia*. Those of the second order are such as are usually found in smaller masses, of a crustated structure, formed by various incrustations round a central nucleus, and divided by a very thin septa. Of this order were only two genera: 1. Those with a short roundish nucleus, enclosed within the body of the mass; and, 2. Those with a long nucleus, standing out beyond the ends of the mass.

SEPTAS, in botany, a genus of plants belonging to the order of heptagynia, and the class of heptandria; natural order thirteenth, succulentæ: CAL. divided into seven parts; the petals are seven; the germens seven: CAPS. also seven, and contain many seeds. There is only one species, viz.

S. *Capensis*, which is a native of the Cape of Good Hope, is round-leaved, and flowers in August and September.

SEPTEM [Lat.], seven, forms part of the names of some ancient places: as Septem Aquæ,

a lake near Reate, in Italy. Cic. 4. Att. 15. Septem Aquæ Mariæ, the entrance of the seven mouths of the Po into the Adriatic. Septem Fratres [q. d. Seven Brethren], a mountain of Mauritania, with seven summits; now called Gebel or Gebel Mousa.

**SEPTEM'BER, n. s.** Fr. *Septembre*; Lat. *September*. The ninth month of the year; the seventh from March.

*September* hath his name as being the seventh month from March: he is drawn with a merry and cheerful countenance in a purple robe.

*Peacham on Drawing.*

SEPTEMBER consists of only thirty days; it took its name as being the seventh month from March, with which the Romans began their year.

**SEPTEMBRISERS** [Fr. *Septembriseurs*], a name invented to stigmatise those bloody Parisians, who, in September 1792, went to the state prisons, and, without trial by judges or juries, massacred most of the prisoners who were confined in them.

**SEPTEN'NIAL, adj.** Lat. *septennis*. Lasting seven years; happening once in seven years.

Being once dispensed with for his *septennial* visit, by a holy instrument from Petropolis, he resolved to govern them by subaltern ministers.

*Howell's Vocal Forest.*

The days of men are cast up by *septenaries*, and every seventh year conceived to carry some altering character in temper of mind or body.

*Browne's Vulgar Errors.*

These constitutions of Moses, that proceed so much upon a *septenary*, or number of seven, have no reason in the nature of the thing.

*Burnet.*

Every controversy has seven questions belonging to it; though the order of nature seems too much neglected by a confinement to this *septenary* number.

*Watts.*

**SEPTENNIAL ELECTIONS.** Blackstone, in his *Commentaries*, vol. i. p. 189, says (after observing that the utmost extent of time allowed the same parliament to sit by the stat. 6 W. & M. c. 2, was three years), 'But by the statute 1 Geo. I. st. 2. c. 38 (in order professedly to prevent the great and continued expenses of frequent elections, and the violent heats and animosities consequent thereupon, and for the peace and security of the government, just [then recovering from the late rebellion]), this term was prolonged to seven years; and, what alone is an instance of the vast authority of parliament, the very same house that was chosen for three years enacted its own continuance for seven.'

**SEPTENTRIO**, in astronomy, a constellation more usually called *ursa minor*.

**SEPTEN'TRION, n. s. & adj.** Fr. *septentrion*; Lat. *septentrionalis*, *adv.*

**SEPTEN'TRIONATE, v. n.** Fr. *septentrion*. The north; northerly: to send northerly.

Thou art as opposite to every good  
As the antipodes are unto us,  
Or as the south to the *septentrion*.

*Shakspeare. Henry VI.*

Backed with a ridge of hills,  
That screened the fruits of the earth and seats of  
men

From cold *septentrion* blasts.

*Milton's Paradise Regained.*

If they be powerfully excited, and equally let fall,  
they commonly sink down, and break the water, at

that extreme wherest they were *septentrionally* excited.

*Browne.*

Steel and good iron, never excited by the loadstone, *septentrionate* at one extreme, and australise at another.

*Id.*

If the spring

Preceding should be destitute of rain,  
Or blast *septentrional* with brushing wings  
Sweep up the smoaky mists and vapours damp,  
Then woe to mortals!

*Phillips.*

**SEPTERION**, a festival observed once in nine years in honor of Apollo. It was a representation of his victory over Python. See PYTHON.

**SEPTFOIL** [from Lat. *septem* and *folia*, q. d. seven leaves], the English name of a species of tormentilla.

**SEPTICAL, adj.** Gr. *σηπτικός*. Having power to promote or produce putrefaction.

As a *septical* medicine Galen commanded the ashes of a salamander.

*Browne's Vulgar Errors.*

**SEPTICS**, substances which promote putrefaction, chiefly the calcareous earths, magnesia, and testaceous powders. From many curious experiments made by Sir John Pringle, to ascertain the septic and antiseptic virtues of natural bodies, it appears that there are very few substances of a truly septic nature. Those commonly reputed such by authors, as the alkaline and volatile salts, he found to be no wise septic. However, he discovered some, where it seemed least likely to find any such quality; these were chalk, common salt, and testaceous powders. He mixed twenty grains of crabs' eyes, prepared with six drams of ox's gall, and an equal quantity of water. Into another phial he put an equal quantity of gall and water, but no crabs' eyes. Both these mixtures being placed in the furnace, the putrefaction began much sooner where the powder was than in the other phial. On making a like experiment with chalk, its septic virtue was found to be much greater than that of the crabs' eyes: nay, what the doctor had never met with before, in a mixture of two drams of flesh with two ounces of water and thirty grains of prepared chalk, the flesh was resolved into a perfect mucus in a few days. To try whether the testaceous powders would also dissolve vegetable substances, the doctor mixed them with barley and water, and compared this mixture with another of barley and water alone. After a long maceration by a fire, the plain water was found to swell the barley, and turn mucilaginous and sour; but that with the powder kept the grain to its natural size, though it softened it, yet made no mucilage and remained sweet.

Nothing could be more unexpected than to find sea salt a hastener of putrefaction; but the fact is thus: one dram of salt preserves two drams of fresh beef, in two ounces of water, above thirty hours uncorrupted, in a heat equal to that of the human body; or, which is the same thing, this quantity of salt keeps flesh sweet twenty hours longer than pure water; but then half a dram of salt does not preserve it above two hours longer; twenty-five grains have little or no antiseptic virtue, and ten, fifteen, or even twenty grains, manifestly both hasten and heighten the corruption. The quantity which had the most putrefying

quality, was found to be about ten grains to the above proportion of flesh and water. Many inferences might be drawn from this experiment: one is, that since salt is never taken in aliment beyond the proportion of the corrupting quantities, it would appear that it is subservient to digestion chiefly by its septic virtue, that is, by softening and resolving meats; an action very different from what is commonly believed. The above experiments were made with the salt kept for domestic uses. See Pringle on the Diseases of the Army, p. 348, et seq.

**SEPTILATERAL**, *adj.* Lat. *septem* and *lateralis*. Having seven sides.

By an equal interval they make seven triangles, the bases whereof are the seven sides of a *septilateral* figure, described within a circle.

*Browne's Vulgar Errors.*

**SEPTIMIUS** (Titus), a Roman knight, celebrated for his poems, both tragic and lyric. He was intimate with the emperor Augustus, and the poet Horace, who addressed the sixth ode of his second book to him.

**SEPTIZON**, or **SEPTIZONIUM**, in Roman antiquity, a celebrated mausoleum, built by Septimius Severus, in the tenth region of the city of Rome: it was so called from *septem* and *zona*, by reason it consisted of seven stories, each of which was surrounded by a row of columns.

**SEPTUAGINT**, *n. s.* Lat. *septuaginta*. The old Greek version of the Old Testament, so called as being supposed the work of seventy-two interpreters. See below.

The three hundred years of John of times, or *Nestor*, cannot afford a reasonable encouragement beyond Moses's *septuagenary* determination.

*Browne's Vulgar Errors.*

In our abridged and *septuagesimal* age, it is very rare to behold the fourth generation. *Id.*

Which way soever you try you shall find the product great enough for the extent of this earth; and, if you follow the *Septuagint* chronology, it will still be far higher.

*Burnet.*

The *Septuagint* is said to be the work of seventy-two Jews, who are usually called the seventy interpreters, because seventy is a round number. The history of this version was expressly written by Aristaeas, an officer of the guards to Ptolemy Philadelphus. The substance of his account is as follows:—Ptolemy having erected a fine library at Alexandria, which he took care to fill with the most curious and valuable books from all parts of the world, was informed that the Jews had one containing the laws of Moses, and the history of that people; and, being desirous of enriching his library with a Greek translation of it, applied to the high-priest of the Jews; and, to engage him to comply with his request, set at liberty all the Jews whom his father Ptolemy Soter had reduced to slavery. After such a step he easily obtained what he desired; Eleazar the Jewish high-priest sent back his ambassadors with an exact copy of the Mosaical law, written in letters of gold, and six elders of each tribe, in all seventy-two, who were received with marks of respect by the king, and then conducted into the Isle of Pharos, where they were lodged in a house prepared for their reception, and supplied with every thing necessary. They set about the translation without

loss of time, and finished it in seventy-two days, and, the whole being read in the presence of the king, he admired the profound wisdom of the laws of Moses, and sent back the deputies laden with presents, for themselves, the high-priest, and the temple. Aristobulus, who was tutor to Ptolemy Physcon; Philo, who lived in our Saviour's time, and was contemporary with the apostles; and Josephus, speak of this translation as made by seventy-two interpreters, by the care of Demetrius Phalareus, in the reign of Ptolemy Philadelphus. All the Christian writers, during the first fifteen centuries of the Christian era, have admitted this account of the *Septuagint* as an undoubted fact. But, since the Reformation, critics have boldly called it in question, because it was attended with circumstances which they think inconsistent or improbable. Du Pin has asked, why were seventy-two interpreters employed, since twelve would have been sufficient? Such an objection is trifling. We may as well ask, why did king James I. employ fifty-four translators in rendering the Bible into English, since twelve, or even two, might have been sufficient? 1. Prideaux objects that the *Septuagint* is not written in the Jewish, but in the Alexandrian dialect, and could not therefore be the work of natives of Palestine. But these dialects were probably at that time the same; for both Jews and Alexandrians had received the Greek language from the Macedonians about fifty years before. 2. Prideaux farther contends that all the books of the Old Testament could not be translated at the same time; for they exhibit great difference of style. To this it is sufficient to reply that they were the work of seventy-two men, each of whom had separate portions assigned him. 3. The dean also urges that Aristaeas, Aristobulus, Philo, and Josephus, all directly tell us that the law was translated without mentioning any of the other sacred books. But nothing was more common among writers of the Jewish nation than to give this name to the Scriptures as a whole. In the New Testament *law* is used as synonymous with what we call the Old Testament. Besides, it is expressly said by Aristobulus, in a fragment quoted by Eusebius (*Præp. Evan. I. 1*), that the whole sacred Scripture was rightly translated through the means of Demetrius Phalereus, and by the command of Philadelphus. Josephus indeed, says the learned dean, asserts, in the preface of his *Antiquities*, that the Jewish interpreters did not translate for Ptolemy the whole Scriptures, but the law only. Here the evidence is contradictory, and we have only to enquire whether Aristobulus or Josephus had the best opportunity of knowing the truth. Aristobulus was an Alexandrian Jew, tutor to an Egyptian king, and lived within 100 years after the translation was made, and certainly had access to see it in the royal library. Josephus was a native of Palestine, and lived not until 300 years or more after the translation was made, and many years after it was burnt, along with the whole library of Alexandria, in the wars of Julius Cæsar. Supposing the veracity of these two writers equal, as we have no proof of the contrary, which of them ought we to consider as the best evidence? Aristobulus surely. If the writings which have passed under his name were

a forgery of the second century, it is surprising that they should have imposed upon Clemens Alexandrinus, who lived in the same century, and was a man of abilities, learning, and well acquainted with the writings of the ancients. Eusebius, too, in his *Præp. Evan.*, quotes the commentaries of Aristobulus. And in answer to the dean's objections, that neither Philo nor Josephus have quoted Aristobulus, it is sufficient to observe that it was not the uniform practice of these times to name the authors from whom they derived their information. 4. Prideaux farther contends that the sum which Ptolemy is said to have given to the interpreters is too great to be credible. If his computation were just, it certainly would be so. He makes it £2,000,000 sterling; but Dr. Blair reduces it to £85,421, and others to £56,947; neither of which is a sum so very extraordinary in so great and magnificent a prince as Philadelphus, who spent, according to a passage in Athenæus, lib. v., no less than 10,000 talents on the furniture of one tent; which is six times more than what was spent in the whole of the embassy and translation, which amounted only to 1552 talents. 5. Prideaux says, that which convicts the whole story of Aristeas of falsity is, that he makes Demetrius Phalereus to be the chief actor in it, and a great favorite of the king; whereas Philadelphus, as soon as his father was dead, cast him into prison, where he soon after died. But it is replied that Philadelphus reigned two years jointly with his father Lagus; and it is not said by Hermippus that Demetrius was out of favor with Philadelphus during his father's life. Now, if the Septuagint was translated in the beginning of the reign of Philadelphus, as Eusebius and Jerome think, the difficulty will be removed. Demetrius might have been librarian during the reign of Philadelphus, and yet imprisoned on the death of Lagus. Indeed, as the cause of Philadelphus's displeasure was the advice which Demetrius gave to his father, to prefer the sons of Arsinœ before the son of Berenice, he could scarcely show it till his father's death. The Septuagint translation might therefore be begun while Philadelphus reigned jointly with his father, but not be finished till after his father's death. 6. Besides the above objections, there is only one more that deserves notice. The ancient Christians not only differ from one another concerning the time in which Aristobulus lived, but even contradict themselves in different parts of their works. Sometimes they tell us he dedicated his book to Ptolemy Philometer, at other times they say it was addressed to Philadelphus and his father. Sometimes they make him the same person who is mentioned in 2 Maccabees, chap. i., and sometimes one of the seventy-two interpreters, 152 years before. It is difficult to explain how authors fall into such inconsistencies; but it is probably occasioned by their quoting from memory. This was certainly the practice of almost all the early Christian writers, and sometimes of the apostles themselves. Mistakes were therefore inevitable. Josephus has varied in the circumstances of the same event, in his *Antiquities* and *Wars of the Jews*, probably from the same cause; but we do not hence conclude that every circumstance of such a relation is entirely false. In the account

of the marquis of Argyle's death, in the reign of Charles II., we have a very remarkable contradiction. Lord Clarendon relates that he was condemned to be hanged, which was performed the same day: on the contrary, Burnet, Woodrow, Heath, and Echard, concur in stating that he was beheaded; and that he was condemned upon the Saturday and executed upon the Monday. Was any reader of English history ever sceptic enough to raise from hence a question, whether the marquis of Argyle was executed or not? Yet this ought to be left in uncertainty, according to, the way of reasoning in which the facts respecting the translation of the Septuagint are attempted to be disproved. Such are the objections which the learned and ingenious Prideaux has raised against the common account of the Septuagint translation, and such are the answers which may be given to them. We support that opinion which is sanctioned by historical evidence, in preference to the conjectures of modern critics, however ingenious; being persuaded that there are many things recorded in history which, though perfectly true, yet, from our imperfect knowledge of the concomitant circumstances, may, at a distant period, seem liable to objections. To those who require positive evidence, it may be stated thus: Aristeas, Aristobulus, Philo, and Josephus, assure us that the law was translated. Taking the law in the most restricted sense, we have at least sufficient authority to assert that the Pentateuch was rendered into Greek under Ptolemy Philadelphus. Aristobulus affirms that the whole Scriptures were translated by the seventy-two. Josephus confines their labors to the books of Moses. He therefore who cannot determine which of the two is the most respectable, may suspend his opinion. It is certain, however, that many of the other books, were translated before the age of our Saviour; for they are quoted both by him and his apostles; and, perhaps, by a minute examination of ancient authors, in the same way that Dr. Lardner has examined the Christian fathers to prove the antiquity of the New Testament, the precise period in which the whole books of the Septuagint were composed might, with considerable accuracy, be ascertained. For 400 years this translation was in high estimation with the Jews. It was read in their synagogues in preference to the Hebrew; not only in those places where Greek was the common language, but in many synagogues of Jerusalem and Judea. But, when they saw that it was equally valued by the Christians, they became jealous of it; and at length, in the second century, Aquila, an apostate Christian, attempted to substitute another Greek translation in its place. In this work he was careful to give the ancient prophecies concerning the Messiah a different turn from the Septuagint, that they might not be applicable to Christ. In the same design he was followed by Symmachus and Theodotion, who also, as St. Jerome informs us, wrote out of hatred to Christianity. In the mean time the Septuagint, from the ignorance, boldness, and carelessness of transcribers, became full of errors. To correct these, Origen published a new edition in the beginning of the third century, in which he placed the translations of Aquila, Symmachus, and Theodotion. This edi-

was called Tetrapla; the translations being arranged opposite to one another in four columns. He also added one column, containing the Hebrew text in Hebrew letters, and another exhibiting it in Greek. In a second edition he published two additional Greek versions; one of which was found at Nicopolis, and the other at Jericho; this was called the Hexapla. By comparing so many translations, Origen endeavoured to form a correct copy of the Scriptures. Where they all agreed, he considered them as right. The passages which he found in the LXX., but not in the Hebrew text, he marked with an obelisk: what he found in the Hebrew, but not in the LXX., he marked with an asterisk. St. Jerome says that the additions which Origen made to the LXX., and marked with an asterisk, were taken from Theodotion. From this valuable work of Origen, the version of the LXX. was transcribed in a separate volume, with the asterisks and obelisks, for the use of the churches; and from this circumstance the great work itself was neglected and lost. About the year 300 two new editions of the LXX. were published; the one by Hesychius an Egyptian bishop, and the other by Lucian a presbyter of Antioch. But, as these authors did not mark with any note of distinction the alterations which they had made, their editions do not possess the advantages of Origen's. The best edition of the LXX. is that of Dr. Grabe, which was published in the beginning of the last century. He had access to two MSS., nearly of equal antiquity, the one found in the Vatican library at Rome, the other in the Royal library at St. James's, which was presented to Charles I. by Cyril, patriarch of Alexandria, and hence it is commonly called the Alexandrian MS. Anxious to discover which of these was according to the edition of Origen, Dr. Grabe collected the fragments of the Hexapla, and found they agreed with the Alexandrian MS., but not with the Vatican, where it differed with the other. Hence he concluded that the Alexandrian MS. was taken from the edition of Origen. By comparing the quotations from Scripture in the works of Athanasius and St. Cyril, who were patriarchs of Alexandria at the time St. Jerome says Hesychius' edition of the LXX. was there used, with the Vatican MS., he found they agreed so well that he justly inferred that that MS. was taken from the edition of Hesychius. This version was in use to the time of our blessed Saviour, and is that out of which most of the citations in the New Testament from the Old are taken. It was also the ordinary canonical translation made use of by the Christian church in the earliest ages; and it still subsists in the churches both of the east and west. Those who desire a more particular account of the Septuagint translations may consult Hody de Bibliorum Textibus, Prideaux's Connections, Owen's Enquiry into the Septuagint Version, Blair's Lectures on the Canon, and Michaelis's Introduction to the New Testament, last edition.

SEPTUAGINT CHRONOLOGY, the chronology which is formed from the dates and periods of time mentioned in the Septuagint translation of the Old Testament. It reckons 1500 years more

from the creation to Abraham than the Hebrew Bible. Dr. Kennicot, in the dissertation prefixed to his Hebrew Bible, has shown it to be very probable that the chronology of the Hebrew Scriptures, since the period just mentioned, was corrupted by the Jews, between the year 175 and 200, and that the chronology of the Septuagint is more agreeable to truth. It is a fact, that during the second and third centuries the Hebrew Scriptures were almost entirely in the hands of the Jews, while the Septuagint was confined to the Christians. The Jews had therefore a very favorable opportunity for this corruption. The following is the reason which is given by oriental writers: it being a very ancient tradition that the Messiah was to come in the sixth chiliasm, because he was to come in the last days (founded on a mystical application of the six days' creation), the contrivance was to shorten the age of the world from about 5500 to 3760: and thence to prove that Jesus could not be the Messiah. Dr. Kennicot adds that some Hebrew copies having the larger chronology were extant till the time of Eusebius, and some till the year 700.

SEPTUM, in anatomy, an enclosure or partition; a term applied to several parts of the body, which serve to separate one part from another; as, septum narium, or partition between the nostrils, &c.

SEPTUM LUCIDUM, *See Anatomy.*

SEPULCHRE, *n. s. &* Fr. *sepulchre*;

SEPULCHRAL, *adj.* [v. a.] Lat. *sepulchrum*. A

SEPULTURE, *n. s.* grave; tomb: to entomb; bury: sepulture is, burial; interment.

His miracles, and our redemption, wrought;  
Where I, by thee inspired, ~~him~~ praises sung,  
And on his sepulchre my offering hung. *Sandys.*

To entail him and 's heirs unto the crown,  
What is it but to make thy sepulchre?

*Shakespeare. Henry VI.*

Go to thy lady's grave, and call her thence:  
Or, at the least, in hers sepulchre thine. *Shakspeare.*

Flies and spiders get a sepulchre in amber more durable than the monument and embalming of any king. *Bacon.*

Whilst our souls negotiate there,

We like sepulchral statues lay;

All day the same our postures were,

And we said nothing all the day. *Donne.*

I am glad to see that time survive,

Where merit is not sepulchred alive;

Where good men's virtues them to honours bring,  
And not to dangers. *Ben Jonson*

Perpetual lamps for many hundred years have continued burning, without supply, in the sepulchres of the ancients. *Wilkins.*

Mine eye hath found that sad sepulchral rock,  
That was the casket of heaven's richest store. *Milton.*

Thou so sepulchred in such pomp dost lie,  
That kings for such a tomb would wish to die. *Id.*

That Niobe, weeping over her children, was turned into a stone, was nothing else but that during her life she erected over her sepulture a marble tomb of her own. *Bacon.*

If not one common sepulchre contains  
Our bodies, or one common urn us remains,  
Yet Cœus and Phœbus shall join. *Dryden.*

Where we may royal sepulture prepare ;  
With speed to Meselinda bring relief,  
Recal her spirits and moderate her grief. *Id.*  
In England sepulture, or burial of the dead, may  
be deferred and put off for the debts of the person  
deceased. *Ayliffe.*

Disparted streams shall from their channels fly,  
And, deep discharged, by sandy mountains lie.  
Obscurely sepulchred. *Prior.*

Sepulchral lies our holy walls to grace,  
And new-year odes. *Pope's Dunciad.*

SEPFULCHRE is chiefly used in speaking of the burying places of the ancients, those of the moderns being usually called tombs. Sepulchres were held sacred and inviolable; and the care taken of them has always been held a religious duty, grounded on the fear of God, and the belief of the soul's immortality. Those who have searched or violated them have been thought odious by all nations, and were always severely punished. The Egyptians called sepulchres eternal houses, in contradistinction to their ordinary houses or palaces, which they called inns, on account of their short stay in the one in comparison of their long abode in the other. See TOMB.

SEPULCHRE, KNIGHTS OF THE HOLY, a military order, established in Palestine about the year 1114. The knights of this order in Flanders chose Philip II., king of Spain, for their master, in 1358, and afterwards his son; but the grand-master of the order of Malta prevailed on the last to resign; and, when afterwards the duke of Nevers assumed the same quality in France, the same grand-master by his interest and credit procured a like renunciation of him, and a confirmation of the union of this order to that of Malta.

SEPULCHRE, REGULAR CANONS OF ST., a religious order, formerly instituted at Jerusalem, in honor of the holy sepulchre, or the tomb of Jesus Christ. Many of these canons were brought from the Holy Land into Europe, particularly into France, by Louis the Younger; into Poland, by Jaxa, a Polish gentleman; and into Flanders, by the counts thereof; many also came into England. This order was, however, suppressed by Pope Innocent VIII., who gave its revenues and effects to that of our Lady of Bethlehem; which also becoming extinct, they were bestowed on the knights of St. John of Jerusalem. But the suppression did not take effect in Poland, where they still subsist, as also in several provinces of Germany. These canons follow the rule of St. Augustine.

SEPULVEDA (John Genes de), a Spanish writer, born at Cordova in 1491. He became chaplain and historiographer to the emperor Charles V.; and wrote A Vindication of the Cruelties of the Spaniards against the Indians; and other works. He died at Salamanca, in 1572.

SEQUACIOUS, *adj.* Lat. *sequax*. Ductile; pliant: ductility; toughness.

Matter whereof creatures are produced, hath a closeness, lento, and sequacity. *Bacon's Natural History.*

Orpheus could lead the savage race,  
And trees uprooted left their place,

Sequacious of the lyre :  
But bright Cecilia raised the wonder higher ;  
When to her organ vocal breath was given,  
An angel heard,  
And straight appeared,  
Mistaking earth for heaven. *Dryden.*

In the greater bodies the forge was easy, the matter being ductile and *sequacious*, and obedient to the hand and stroke of the artificer, and apt to be drawn, formed or moulded. *Ray.*

Above those superstitious horrors that enslave  
The fond *sequacious* herd, to mystick faith  
And blind amazement prone, the enlightened few  
The glorious stranger hail. *Thomson.*

SEQUANA, a river of ancient Gaul, which separated the territories of the Belgæ and the Celtae. It is now called the Seine. Strabo 4, Mela iii. 2, Lucan i. v. 425.

SEQUANI, a people anciently inhabiting a part of Gallia Celtica, annexed to Belgica by Augustus, separated from the Helvetii by Mount Jura, with the Rhine on the east (Strabo), bordering on the Aedu, and Segustiano to the south, and Lingones to the west (Tacitus). It was lately called FRANCHE COMTE. See that article.

SÉQUEL, *n. s.* Fr. *sequelle*; Lat. *sequela*. Conclusion; succeeding part.

Let any principal thing, as the sun or the moon, but once cease, fail or swerve, and who doeth not easily conceive that the *sequel* thereof would be ruin both to itself and whatsoever dependeth on it? *Hooker.*

What *sequel* is there in this argument? An arch-deacon is the chief deacon: ergo, he is only a deacon. *Whitgift.*

If black scandal or foul-faced reproach  
Attend the *sequel* of your imposition,  
Your mere enforcement shall acquaintance me.

*Shakespeare. Richard III.*

In these he put two weights,  
The *sequel* each of parting and of fight. *Milton.*  
Was he not a man of wisdom? Yes, but he was poor: but was he not also successful? True, but still he was poor: grant this, and you cannot keep off that unavoidable *sequel* in the next verse, the poor man's wisdom is despised. *South.*

SEQUENT, *adj. & n. s.* Lat. *sequens*.

SEQUENCE, *n. s.* Following; succeeding: a follower: sequence is order of succession.

How art thou a king,  
But by fair *sequence* and succession?  
*Shakespeare. Richard III.*

Let my trial be my own confession:  
Immediate sentence then, and *sequent* death,  
Is all the grace I beg. *Id. Measure for Measure.*

Here he hath framed a letter to a *sequent* of the stranger queen's, which accidentally miscarried. *Shakespeare.*

The cause proceedet from a precedent *sequence* and series of the seasons of the year.

*Bacon's Natural History.*

There he dies, and leaves his race  
Growing into a nation; and now grown  
Suspected to a *sequent* king, who seeks  
To stop their overgrowth. *Milton's Paradise Lost.*

SEQUESTER, *adj.* Fr. *sequestrer*; low

SEQUESTRABLE, *v. a.* Lat. *sequestro*. To se-

SEQUESTRATE, *v. n.* parate from others for

SEQUESTRATION, *n. s.* the sake of privacy;

SEQUESTRA'TOR. separate generally; remove; set aside from the owner's use for that

of his creditors : all the derivatives follow one or other of these senses.

A thing as seasonable in grief as in joy, as decent being added unto actions of greatest weight and solemnity, as being used when men most sequester themselves from action. *Hooker.*

Why are you sequestered from all your train ? *Shakespeare.*

His addiction was to courses vain ;  
I never noted in him any study,

Any retirement, any sequestration

From open haunts and popularity. *Id. Henry V.*

Although I had wholly sequestered my civil affairs, yet I set down, out of experience in business and conversation in books, what I thought pertinent to this affair. *Bacon.*

I am fallen into the hands of publicans and seq[ue]st[r]ators, and they have taken all from me. *Taylor.*

In shady bower

More sacred and sequestered, though but feign'd,  
Pan or Silvanus never slept. *Milton.*

Hartshorn, and divers other bodies belonging to the animal kingdom, abound with a not uneasily sequestrable salt. *Boyle.*

The metals remain unsevered, the fire only dividing the body into smaller particles, hindering rest and continuity, without any sequestration of elementary principles. *Id.*

It was his taylor and his cook, his fine fashion, and his French ragouts, which sequestered him ; and, in a word, he came by his poverty as sinful as some usually do by their riches. *South.*

There must be leisure, retirement, solitude, and a sequestration of a man's self from the noise of the world ; for truth scorns to be seen by eyes much fixt upon inferior objects. *Id.*

In general contagions more perish for want of necessities than by the malignity of the disease, they being sequestered from mankind. *Arbuthnot on Aliments.*

Ye sacred Nine ! that all my soul possess,  
Whose raptures fire me, and whose visions bless,  
Bear me, oh bear me, to sequestered scenes  
Of bowery mazes, and surrounding greens. *Pope.*

If there be a single spot in the glebe more barren the rector or vicar may be obliged, by the caprice or pique of the bishop, to build upon under pain of sequestration. *Swift.*

SEQUESTRATION, in common law, is setting aside the thing in controversy, from the possession of both the parties that contend for it. In which sense it is either voluntary, as when done by the consent of the parties ; or necessary, as where it is done by the judge, of his own authority, whether the parties will or not.

SEQUESTRATION, in the civil law, is the act of the ordinary, disposing of the goods and chattels of one deceased, whose estates no man will meddle with. A widow is also said to sequester, when she disclaims having any thing to do with the estate of her deceased husband. Among the Romanists, in questions of marriage, where the wife complains of impotency in the husband, she is to be sequestered into a convent, or into the hands of matrons, till the process be determined.

SEQUESTRATION is also used for the act of gathering the fruits of a benefice void, to the use of the next incumbent. Sometimes a benefice is kept under sequestration for many years, when it is of so small value that no clergyman fit to serve the cure will be at the charge of taking it

by instruction ; in which case the sequestration is committed either to the curate alone, or to the curate and church-wardens jointly. Sometimes the profits of a living in controversy, either by the consent of the parties, or the judge's authority, are sequestered and placed for safety in a third hand till the suit is determined, a minister being appointed by the judge to serve the cure, and allowed a certain salary out of the profits. Sometimes they are sequestered for neglect of duty, for dilapidations, or for satisfying the debts of the incumbent.

SEQUESTRATION, in chancery, is a commission usually directed to seven persons therein named, empowering them to seize the defendant's personal estate, and the profits of his real, and to detain them, subject to the order of the court. It issues on the return of the serjeant at arms, wherein it is certified that the defendant had secreted himself. Sequestrations were first introduced by Sir Nicholas Bacon, lord keeper in the reign of queen Elizabeth ; before which the court found some difficulty in enforcing its process and decrees ; and they do not seem to be in the nature of process to bring in the defendant, but only intended to enforce the performance of the court's decree.

A SEQUESTRATION is also made, in London, upon an action of debt ; the course of proceeding in which case is this :--The action being entered, the officer goes to the defendant's shop or warehouse, when no person is there, and takes a padlock, and hangs it on the door, uttering these words : 'I do sequester this warehouse, and the goods and merchandise therein, of the defendant in this action, to the use of the plaintiff,' &c., after which he sets on his seal, and makes a return of the sequestration in the compter ; and, four days being passed after the return made, the plaintiff may, at the next court, have judgment to open the shop or warehouse, and to have the goods appraised by two freemen, who are to be sworn at the next court held for that compter ; and then the serjeant puts his hand to the bill of appraisement, and the court grants judgment thereon ; but yet the defendant may put in bail before satisfaction, and by that means dissolve the sequestration ; and, after satisfaction, may put in bail to disprove the debt, &c.

SEQUIN, a gold coin, struck at Venice, and in several parts of the grand seignior's dominions. In Turkey it is called dahab, or piece of gold, and according to Volney is in value about 6s. 3d. sterling. It varies, however, considerably in its value in different countries. At Venice it is (or was) equal to about 9s. 2d. sterling. The Venetian sequins are in great request in Syria, from the fineness of their standard, and the practice they have of employing them for women's trinkets. The fashion of these trinkets does not require much art ; the piece of gold is simply pierced, to suspend it by a chain, likewise of gold, which flows upon the breast. The more sequins that are attached to this chain, and the greater the number of these chains, the more is a woman thought to be ornamented. This is the favorite luxury, and the emulation of all ranks. Even the female peasants for want of gold wear piastres or smaller pieces : but the women of a

certain rank disdain silver; they will accept of nothing but sequins of Venice, or large Spanish pieces, and crusadoes. Some of them wear 200 or 300, as well lying flat, as strung one on another, and hung near the forehead, at the edge of the head dress. It is a real load; but they do not think they can pay too dearly for the satisfaction of exhibiting this treasure at the public bath, before a crowd of rivals, to awaken whose jealousy constitutes their chief pleasure. The effect of this luxury on commerce is the withdrawing considerable sums from circulation, which remain dead; besides, that when any of these pieces return into common use, having lost their weight by being pierced, it becomes necessary to weigh them. The practice of weighing money is general in Syria, Egypt, and all Turkey. No piece, however effaced, is refused there; the merchant draws out his scales and weighs it, as in the days of Abraham. In considerable payments, an agent of exchange is sent for, who counts paras by thousands, rejects all the false money, and weighs all the sequins, either separately or together.

SEQUINUS, a native of Alba, who gave one of his daughters in marriage to Curiatius of Alba, and the other to Horatius of Rome. The two sisters were delivered of three sons each on the same day; and these youths, when they grew up, fought the famous battle to decide the superiority of their respective countries, and which ended in favor of Rome. See HORATII, and ROME.

SERA'GLIO, *n. s.* Italian; perhaps oriental.—Johnson. Heb. שׂוֹרֶת is a mansion. A house of women kept for debauchery.

There is a great deal more solid content to be found in a constant course of well living, than in the voluptuousness of a *seraglio*. *Norris.*

SERAGLIO is formed from the Persian word *seraw*, or Turkish word *saria*, which signifies a house, and is commonly used to express the house or palace of a prince. In this sense it is frequently used at Constantinople; the houses of foreign ambassadors are called seraglios. But it is commonly used by way of eminence for the palace of the grand seignior at Constantinople.

The SERAGLIO OF THE GRAND SEIGNIOR is in fact his court, where his concubines are lodged, and where the youth are trained up for the chief posts of the empire. It is a triangle about three Italian miles round, wholly within the city of Constantinople, at the end of the promontory Chrysoceras, now called the Seraglio Point. The buildings run back to the top of the hill, and thence are gardens that reach to the edge of the sea. It is enclosed with a high and strong wall, upon which there are several watch towers: and it has many gates, some of which open towards the sea side, and the rest into the city; but the chief gate is one of the latter, which is constantly guarded by a company of capooches, or porters; in the night it is well guarded towards the sea. The outward appearance is not elegant; the architecture being irregular, consisting of separate edifices in the form of pavilions and domes. The ladies are a collection of beautiful young women, chiefly sent until of late as pre-

sents from the provinces and the Greek islands, and most of them the children of Christian parents. The brave prince Heraclius for some years abolished the infamous tribute of children of both sexes, which Georgia formerly paid every year to the Porte. The number of women in the Harem depends on the taste of the reigning sultan. Sultan Selim had 2000, Achmet had but 300, and the late sultan had nearly 1600. On their admission they are committed to the care of old ladies, taught sewing, embroidery, music, dancing, &c., and furnished with the richest clothes and ornaments. They all sleep in separate beds, and between every fifth there is a preceptress. Their chief governess is called Katon Kiaga. They are said to be obliged to wait on one another by rotation; the last that is entered serves her who preceded her and herself. These ladies are scarcely ever suffered to go abroad, except when the grand seignior removes from one place to another, when a troop of black eunuchs conveys them to the boats, which are enclosed with lattices and linen curtains; and when they go by land they are put into close chariots, and signals are made at certain distances, to give notice that none approach the roads through which they march. Among the emperor's attendants are a number of mutes, who act and converse by signs with great quickness, and some dwarfs, who are exhibited for the sultan's amusement. When he permits the women to walk in the gardens of the seraglio all people are ordered to retire, and on every side there is a guard of black eunuchs, with sabres in their hands, while others go their rounds to hinder any person from seeing them. If any one is found in the garden, even through ignorance or inadvertence, he is instantly killed, and his head brought to the feet of the grand seignior, who rewards the guards for their vigilance. Sometimes the grand seignior passes into the gardens to amuse himself when the women are there; and it is then that they make use of their utmost efforts, by dancing, singing, seducing gestures, and amorous blandishments, to attract his affections. It is not permitted that the monarch should take a virgin to his bed, except during the solemn festivals, and on occasion of some extraordinary rejoicings, or the arrival of some good news. Upon such occasions, if the sultan chooses a new companion, he enters into the apartment of the women, who are ranged in files by the governesses, to whom he speaks, and intimates the person he likes best. The others now follow her to the bath, washing, perfuming, and dressing her superbly, and finally conducting her, singing and dancing, to the imperial bed-chamber of the grand seignior. Scarcely has the new elected favorite entered the chamber, introduced by the grand eunuch who is upon guard, than she kneels down, and at the call of the sultan creeps into the foot of the bed: after a certain time, upon a signal given by the sultan, the governess of the girls, with all her suite, enter the apartment, and take her back again, conducting her with the same ceremony to the women's apartments; if by good fortune she becomes pregnant, and is delivered of a boy, she is called asaki sultaneess, that is to say, sultaneess-mother;

for the first son she has the honor to be crowned and she has the liberty of forming her court. Eunuchs are also assigned for her guard, and particular service. No other ladies, though delivered of boys, are either crowned or maintained with such costly distinction as the first ; however, they have their service apart, and handsome appointments. After the death of the sultan, the mothers of the male children are shut up in the old seraglio, whence they can never come out any more, unless any of their sons ascend the throne. Baron de Tott informs us that the female slave who becomes the mother of a sultan, and lives long enough to see her son mount the throne, is the only woman who at that period alone acquires the distinction of sultana-mother ; she is till then in the interior of her prison with her son. The title bachi-kadun, or principal woman, is the first dignity of the grand seignior's harem.

SERAGLIO, OR HAREM, OF THE EMPEROR OF MOROCCO.—The account of this seraglio, by M. Lempriere, is still interesting. Being a surgeon, he was admitted into the harem to prescribe for some of the ladies who were indisposed, and was therefore enabled to give a particular account of this female prison. The harem forms a part of the palace. The apartments, which are all on the ground floor, are square, very lofty, and four of them enclose a spacious square court, into which they open by means of large folding doors. In the centre of these courts, which are floored with blue and white chequered tiling, is a fountain, supplied by pipes from a large reservoir on the outside of the palace, which serves for the frequent ablutions recommended by the Mahometan religion. The whole of the harem consists of about twelve of these courts, communicating with each other by narrow passages, which afford a free access from one part of it to another, and of which all the women are allowed to avail themselves. The apartments are ornamented on the outside with beautiful carved wood. In the inside most of the rooms are hung with rich damask of various colors ; the floors are covered with beautiful carpets, and there are mattresses disposed at different distances, for the purposes of sitting and sleeping. The apartments are also furnished at each extremity with an elegant European mahogany bedstead, hung with damask, having on it several mattresses placed one over the other, which are covered with various colored silks ; but these beds are merely for ornament. In all the apartments the ceiling is wood, carved and painted. The principal ornaments were large and valuable looking glasses, hung on different parts of the walls ; clocks and watches of different sizes, in glass cases, were disposed in the same manner. The sultana Lalla Batoom and another favorite were indulged with a whole square to themselves ; but the concubines were only each allowed a single room. Each female had a separate daily allowance from the emperor, proportioned to the estimation in which they were held by him. The late emperor's allowance was very trifling : Lalla Douyaw, the favorite sultana, had very little more than half-a-crown English a day, and the others less. He indeed made them occasional presents of money, dress,

and trinkets ; but this could never be sufficient to support the expenses they must incur. Their greatest dependence therefore was on the presents they received from those Europeans and Moors who visited the court, and who employed their influence in obtaining some particular favor from the emperor. This was the most successful mode that could be adopted. When M. Lempriere was at Morocco, a Jew, desirous of obtaining a very advantageous favor from the emperor, for which he had been a long time unsuccessfully soliciting, sent to all the principal ladies of the harem presents of pearls to a very large amount : the consequence was that they all went in a body to the emperor, and immediately obtained the wished for concession. The ladies separately furnish their own rooms, hire their own domestics, and, in fact, do what they please in the harem, but are not permitted to go out without an express order from the emperor, who very seldom grants them that favor, except when they are to be removed from one palace to another. In that case a party of soldiers is despatched a little distance before them to disperse the male passengers, and prevent their being seen. This previous step being taken, a piece of linen cloth is tied round the lower part of the face, and afterwards these miserable females cover themselves entirely with their haicks, and either mount mules, which they ride like men, or, what is more usual, are put into a square carriage or litter, constructed for this purpose, which by its lattice-work allows them to see without being seen. In this manner they set off, under a guard of black eunuchs. This journey, and sometimes a walk within the bounds of the palace, is the only exercise they are permitted to take. The late emperor's harem consisted of between sixty and 100 females, besides their numerous domestics and slaves. Many of the concubines were Moorish women : several were European slaves, who had either been made captives, or purchased by the emperor ; and some were negroes. In this group the Europeans, or their descendants, had by far the greatest claim to the character of handsome. There was one, in particular, who was a native of Spain, and taken into the harem at about the same age as Lalla Douyaw, who was indeed a perfect beauty ; and many others were almost equally handsome. The eunuchs, who have the entire charge of the women, and who in fact live always among them, are the children of negro slaves. They are generally either very short and fat, or else tall, deformed, and lame. Their voices have that particular tone which is observable in youths who are just arriving at manhood ; and their persons altogether afford a disgusting image of weakness and effeminacy.

M. Lempriere gives a very curious account of the manners of these immured females :—‘ Attended by a eunuch,’ says he, ‘ after passing the gate of the harem, which is always locked, and under the care of a guard of eunuchs, we entered a narrow and dark passage, which soon brought us to the court, into which the women’s chambers open. We here saw numbers of both black and white women and children ; some concubines, some slaves. Upon their observing the unusual figure of a European, the whole

multitude in a body surrounded me, and expressed the utmost astonishment at my dress and appearance. Some stood motionless with their hands lifted up, their eyes fixed, and their mouths open, in wonder and surprise. Some burst into fits of laughter; while others with uncommon attention eyed me from head to foot. The parts of my dress which seemed most to attract their notice were my buckles, buttons, and stockings; for neither men nor women in this country wear any thing of the kind. With respect to the club of my hair, they seemed utterly at a loss in what view to consider it; but the powder they conceived to be employed for destroying vermin. Most of the children, when they saw me, ran away in consternation; and I appeared as singular an animal, and I dare say had the honor of exciting as much curiosity and attention, as a lion or a man-tiger just imported from abroad, and introduced into a country town in England on a market-day. Every time I visited the harem I was surrounded and laughed at by this curious mob, who, on my entering the gate, followed me close to the very chamber to which I was proceeding, and on my return universally escorted me out. The greater part of the women were uncommonly fat and unwieldy; had black and full eyes, round faces, with small noses. They were of different complexions; some very fair, some sallow, and others again perfect negroes. One of my new patients being ready to receive me, I was desired to walk within her room; where to my great surprise I saw nothing but a curtain drawn quite across the apartment, similar to that of the theatre which separates the stage from the audience. A female domestic brought a very low stool, placed it near the curtain, and told me I was to sit down there, and feel her mistress's pulse. The lady, who had by this time summoned up courage to speak, introduced her hand from the bottom of the curtain, and desired me to inform her of all her complaints, which she conceived I might perfectly do by merely feeling the pulse. It was in vain to ask her where her pain was seated; the only answer I could procure was a request to feel the pulse of the other hand. I was under the necessity of informing her in positive terms that to understand the disease it was absolutely necessary to see the tongue as well as to feel the pulse; and that without it I could do nothing for her. My eloquence, or that of my Jewish interpreter, was, however, long exerted in vain; and she would have dismissed me without any further enquiry, had not her invention supplied her with a happy expedient. She contrived to cut a hole through the curtain through which she extruded her tongue, and thus complied with my injunction, but most effectually disappointed my curiosity. I was afterwards ordered to look at another of the prince's wives, who was affected with a scrophulous swelling in her neck. This lady was, in the same manner as the other, at first excluded from my sight; but, as she was obliged to show me her complaint, I had an opportunity of seeing her face, and observed it to be very hands. It is curious to observe the childish notions of persons who have been totally secluded from the world. All the ladies of the harem expected that

our author should have instantly discovered their complaints upon feeling the pulse, and that he could cure every disease instantaneously. He found them proud and vain of their persons, and extremely ignorant. 'Among many ridiculous questions, they asked my interpreter,' says M. Lempriere, 'if I could read and write; upon being answered in the affirmative, they expressed the utmost surprise and admiration at the abilities of the Christians. There was not one among them who could do either; these rudiments of learning are indeed only the lot of a few of their men, who on that account are named Talbs, or explainers of the Mahometan law.' Their needle-work is performed by Jewesses; their food is dressed, and their chambers taken care of, by slaves and domestics. They have no amusement but a rude and barbarous kind of melancholy music, without melody, variety, or taste; and conversation with one another, which must indeed be very confined, uniform, and inanimate, as they never see a new object. Excluded from the enjoyment of fresh air and exercise, so necessary for the support of health and life; deprived of all society but that of their fellow sufferers, a society to which most of them would prefer solitude itself; they are only to be considered as the most abject of slaves—slaves to the vices and caprice of a licentious tyrant, who exacts even from his wives themselves a degree of submission and respect which borders upon idolatry, and which God never meant should be paid to a mortal.

SERAI, a building on the high-road or in large cities in India, erected for the accommodation of travellers.

SERAMPEI, a district in the interior of Sumatra, bounded on the north and north-west by Korinchii, on the east, south-east, and south, by Pakalang, Jambee, and Sungai-tenang; and on the west and south-west by the greater Ayer Dikit River, and chain of high mountains bordering on the Sungai-ipu country. It comprehends fifteen fortified independent villages, besides several talangs, or small open ones. Their entrenchments consist of large trees laid horizontally between stakes driven into the ground, about seven feet high, and six feet thick, with loop-holes for firing through. The inhabitants further defend themselves by planting ranjus which are small sharp-pointed rods, in the paths and carefully concealed, which wound the feet in a distressing manner. They decapitate the bodies of their enemies, stick the heads on poles, and address abusive language to them. Those taken alive are made slaves. In general the inhabitants seem to be quiet and inoffensive. The women are ugly, and their manners uncouth. These people are very strong, being capable of carrying heavy loads during journeys of twenty or thirty days. They acknowledge themselves the subjects of the sultan of Jambee. The country produces cocoa-nuts and cassia. Of the animal productions the rhinoceros is the most considerable; unless we except an annoying insect which drops in myriads from the trees, and being

very long and slender, penetrates the clothes, when travellers sometimes strip, and go into the water in order to wash them off. Part of Serampei is hilly; it is intersected by several

rivers, and contains hot springs, near which columns of smoke are seen to issue from the earth. The inhabitants are Mahometans.

SERAMPORE, so called after Siri Ram, one of the Hindoo deities, a town of Bengal, belonging to the Danes, and pleasantly situated on the western bank of the Bhaggarutty or Hoogly River, twelve miles north of Calcutta. The territory attached extends about a mile along the river, by half a mile in breadth. The houses are of brick, plastered with mortar, and have flat roofs, with balconies and Venetian windows, but few of them are more than two stories high. There is a handsome church, and a battery of twelve pieces of cannon near the flag-staff. It carries on a trifling trade with Europe, China, &c., but is principally distinguished as the residence of the Baptist missionaries, and of the British subjects who take refuge here from their creditors. About the year 1676 the Danes obtained this site for their factory, from the nabob Shaista Khan, who gave great countenance to European and other merchants. During the short war with the Danes it was taken possession of by a British force, but soon after restored. Long.  $88^{\circ} 26' E.$ , lat.  $22^{\circ} 45' N.$ .—There are several other places of this name in Hindostan.

SERANGANI, a cluster of islands in the eastern seas, about five leagues from the southern extremity of Magindanao, and between  $5^{\circ}$  and  $6^{\circ}$  N. lat. The largest, named Hummock, is about thirty miles, and the next in size about twenty-five miles in circumference. There is also another of inferior dimensions. This island, which is the most westerly, is very high, making a sugar loaf. Its north coast is bold; it is well cultivated, and is called Belk. It produces most of the tropical fruits, together with rice, sugar-canapes, pine-apples, mangoes, sour oranges, limes, jacks, plantains, cocoa-nuts, sago, sweet potatoes, tobacco, Indian corn, and honey. The eastern has not near so good an appearance, neither are there any cocoa-nut trees to be seen on it. These islands abound in refreshments, with which they abundantly supply ships. The articles most in request among them are white or printed cottons, such as loose gowns or jackets, colored handkerchiefs, clasp knives, razors, and bar iron: metal buttons are also in demand, and a coat is soon stripped. The inhabitants speak the same language, and are of the same description, as those on the sea coast of Magindanao, being complete Malays. They have canoes, and larger boats, armed with small brass cannon; and, like the other natives of the eastern isles, are addicted to piracy. Their prows are covered with an awning of split bamboos. The Dutch East India Company claimed a sovereignty here, but do not appear to have exercised any of its functions, or to have founded any colonies.

SERAPEUM, Lat., in archaiology, a temple of Serapis, the Egyptian deity. The most famous of these edifices was that at Alexandria. Rufinus, who witnessed it while standing, has left us the following description:—‘This vast mass of building is square, and forms an immense platform, supported on arches, and upon which stands the temple itself. The vaults of the plat-

form are separated into a great number of different apartments, which afford lodging to the priests and attendants; and around are refectories, council chambers, &c. The temple itself is adorned with columns, and has walls of marble.’ Ptolemy, the son of Lagus, had built this serapeum on a spot by which, for a long time before, had stood a chapel consecrated to Serapis and Isis. Both this and the new temple, however, were destroyed by order of the Christian emperor Theodosius. The statue of Serapis, according to Macrobius, was of a human form, with a basket or bushel on his head, signifying plenty. His right hand leaned on the head of a serpent, whose body was wound round a figure with three heads—of a dog, a lion, and a wolf. In his left hand he held a measure of a cubit length, as it were, to take the height of the waters of the Nile. This celebrated statue was destroyed with the temple; its limbs first carried in triumph through the city, and then thrown by the Christians into a fierce fire kindled for that purpose in the amphitheatre. The figure of Serapis is found on many ancient medals.

SERAPHI, n.s. Heb. שָׁרָף, literally, a

SERAPIC, adj. 1 burning one. One of the supposed orders of angels: seraphim is the proper plural: seraphic is relating to or like seraphim.

Then flew one of the seraphims unto me, having a live coal in his hand. *Isaiah vi. 6.*

To thee cherubim and seraphim continually do cry. *Common Prayer.*

Love is curious of little things, desiring to be of angelical purity, of perfect innocence, and seraphical fervor. *Taylor.*

Of seraphim another row. *Milton.*

Seraphick arms and trophies. *Id.*

He is infinitely more remote, in the real excellency of his nature, from the highest and perfectest of all created beings, than the purest seraph is from the most contemptible part of matter, and consequently must infinitely exceed what our narrow understandings can conceive of him. *Locke.*

As full, as perfect, in vile man that mourns,  
As the rapt seraph that adores and burns. *Pope.*

‘Tis to the world a secret yet,  
Whether the nymph, to please her swain,  
Talks in a high romantic strain;  
Or whether he at last descends  
To like with less seraphick ends. *Swift.*

SERAPH, or SERAPHIM, has been considered, but upon what grounds we know not, as a spirit of the highest rank in the hierarchy of angels; who are thus called from their being supposed to be most inflamed with divine love, by their nearer and more immediate attendance at the throne of God, and to communicate their fervor to the remoter and inferior orders. See ANGEL.

SERAPIAS, in botany, a genus of the diandria order, and gynandria class of plants; natural order seventh, orchidæ; the nectarium is egg-shaped and gibbous, with an egg-shaped lip. The species, according to Linnaeus, are eleven; viz. 1. Capensis; 2. cordigera; 3. erecta; 4. falcata; 5. grandiflora, or ensifolia; 6. lancifolia; 7. latifolia; 8. lingua; 9. longifolia; 10. palustris; 11. rubra. Of these the following are the most remarkable:—1. S. grandiflora, or white-flowered helleborine, grows in woods,

and flowers in June. Its characteristics are, fibrous bulbs, sword-shaped leaves, erect flowers; and the lip of the nectarium is obtuse and shorter than the petals. The flowers are large and erect, and consisting of six or eight in a thin spike; the petals are all white, and connive together; the lip of the nectarium is inclosed within the petals, is white and streaked with three yellow prominent lines. It is a native of Britain. 2. *S. latifolia*, the broad-leaved helleborine, is distinguished by fibrous bulbs, by ovate stem-clasping leaves, and pendulous flowers. The stalk is erect, about a cubit high, and furnished with six or eight nervous oval leaves; the spike is about six inches long; the three upper petals are of a green color, and of an oval acute form; the lateral ones are a little shorter, and of a white color, with a little tinge of green. It is a native of Britain. 3. *S. longifolia*, the long leaved helleborine, is also a native of Britain. It has long leaves. 4. *S. palustris*, the marsh helleborine, grows in rough boggy pastures and marshes, and flowers in July. It is distinguished by fibrous bulbs, sword-shaped sessile leaves, pendulous flowers; and the lip of the nectarium is obtuse, somewhat serrated, and longer than the petals. The flowers grow to the number of fifteen or twenty in a loose spike. The three exterior petals are green mixed with red; the lateral ones are white with a red blush; and the nectarium is marked with red lines and yellow tuberculous spots.

SERAPIO, a Greek poet, who flourished in the reign of Trajan. He was intimate with Plutarch.

SERAPION, a physician of Alexandria. He and Philinus of the isle of Cos were both scholars of Herophilus, and founders of the empiric sect; about A. A. C. 287.

SERAPION (John), an Arabian physician, who flourished about A. D. 890. He is by some confounded with the Alexandrian, though he lived 600 years later. His works were printed at Venice, in folio, in 1497, and 1550.

SERAPIS, in mythology, an Egyptian deity, who was worshipped under various names and attributes, as the tutelary god of Egypt in general, and as the patron of several of their principal cities. Herodotus, who describes all the other Egyptian deities, makes no mention of Serapis. Tacitus informs us that he was worshipped as a kind of universal deity that represented Aesculapius, Osiris, Jupiter, and Plato; and he was sometimes taken for Jupiter Ammon, the Sun, and Neptune; and the honors that were rendered to him at Alexandria were more solemn and extraordinary than those of any other place. Plutarch, Clemens of Alexandria, and Tacitus inform us, that while the first Ptolemy was employed in fortifying Alexandria with walls, adorning it with temples and stately buildings, there appeared to him in his sleep a young man of extraordinary beauty, of a stature more than human, admonishing him to dispatch into Pontus some of his most trusty friends to bring thence his statue: he assured him that the city and kingdom which possessed it should prove happy, glorious, and powerful. The young man, having thus spoke, disappeared, mounting up into heaven in a blaze

of fire. Ptolemy discovered his vision to the priests; but, finding them ignorant of Pontus, he had recourse to an Athenian, who informed him that near Sinope, a city of Pontus, there was a temple much resorted to by the natives, which was consecrated to Pluto, where he had a statue, near which stood that of a woman. Ptolemy neglecting the injunctions of the apparition, it again appeared to him in a menacing attitude; and the king immediately dispatched ambassadors to the Scopian monarch, loaded with presents. The king of Sinope consented; but his subjects opposed the removal of the statue. The god, however, of his own accord, as we are informed, conveyed himself to the ambassador's ship, and in three days landed in Alexandria. The statue of Serapis was erected in one of the suburbs of the city, where a magnificent temple was afterwards reared. This statue, according to Macrobius, was of a human form, with a basket or bushel on his head, signifying plenty; his right hand leaned on the head of a serpent, whose body was wound round a figure with three heads, of a dog, a lion, and a wolf; in his left hand he held a measure of a cubit length, as it were to take the height of the waters of the Nile. The figure of Serapis is found on many ancient medals. The famous temple of Serapis at Alexandria was destroyed by order of Theodosius; and the celebrated statue of this deity was broken in pieces, and its limbs carried first in triumph by the Christians through the city, and then thrown into a fierce fire, kindled for that purpose in the amphitheatre. As the Egyptians ascribed the overflowing of the Nile, to which was owing the fertility of their country, to the benign influence of their god Serapis, they concluded that now he was destroyed the river would no longer overflow, and that a general famine would ensue; but when they observed, on the contrary, that the Nile swelled to a greater height than had been known in the memory of man, and thereby produced an immense plenty of all kinds of provisions, many of the Pagans, renouncing the worship of idols, adored the god of the Christians.

SERE, *adj.* Sax. *reapanian*, to dry. Dry; withered; no longer green. See SEAR.

The muses, that were wont green bays to wear,  
Now bringen bitter elder-branches *sere*. Spenser.

He is deformed, crooked, old, and *sere*,  
Ill-faced, worse bodied, shapeless every where;  
Vitios, ungentle. Shakespeare. Comedy of Errors.

Ere this diurnal star  
Leave cold the night, how we his gathered beams  
Reflected may with matter *sere* foment. Milton.

They *sere* wood from the rotten hedges took,  
And seeds of latent fire from flints provoke. Dryden.

On a *sere* branch,  
Low bending to the bank, I sat me down,  
Musing and sull. Rowe's Royal Convert.

SERE, *n.s.* Of this word I know not the etymology. Can it come, like sheers, from Sax. *reçyan*, to cut!—Johnson. Ital. *serri*; Fr. *serre*; of Lat. *sero*.—Thomson. Claw; talon

Two eagles,  
That mounted on the winds, together sull  
Their strokes extended; but arriving now  
Amidst the council, over every brow

Shook their thick wings, and threatening death's cold fears,  
Their necks and cheeks tore with their eager *seres*,  
*Chapman.*

SERE, in hawking, is used for the yellow part of a hawk between the beak and the eyes (see FALCONRY); but this cannot be Chapman's meaning.

SEREGIPPE, or SERGIPPE, a province of Brasil, bounded north by Pernambuco, south by the province of Todos Santos, east by the sea, and west by interior deserts. It is very fertile and well cultivated, abounding in cattle, grain, tobacco, and sugar, in all of which it carries on a flourishing trade. Its ports do not admit large vessels. Population 20,000.

SEREGIPPE, the capital of the above province, is situated on the shore of the river Vazabaris, five miles from the coast. It has a very handsome parish church, but is not a large or very flourishing place.

SERENADE, n. s. Fr. *serenade*; Ital. *serenata*, whence in Milton *serenate*, from Lat. *serenus*, the lovers commonly attending their mistresses in fair nights. Music or songs with which ladies are entertained by their lovers in the night.

Mixt dance, or wanton mask, or midnight ball,  
Or *serenate*, which the starved lover sings  
To his proud fair; best quitted with disdain.  
*Milton.*

Foolish swallow, what dost thou  
So often at my window do,  
With thy tuneless *serenade*?  
*Cowley.*

Shall I the neighbours' nightly rest invade,  
At her deaf doors, with some vile *serenade*?  
*Dryden.*

He continued to *serenade* her every morning, till the queen was charmed with his harmony.  
*Spectator.*

Will fancies he never should have been the man he is, had not he broke windows, and disturbed honest people with his midnight *serenade*, when he was a young fellow.  
*Addison.*

A SERENADE is a kind of concert given in the night by a lover to his mistress, under her window. These sometimes consist only of instrumental music, but at other times voices are added; the music and songs composed for these occasions are also called serenades.

SERENE, n. s. & v. a. Fr. *serin*; Latin *serenus*. Calm; SERENE'LY, adv. SERENIT'UDE, n. s. placid; quiet: the SERENITY. adverb and noun substantive corresponding.

Wherever death doth please t'appear,  
Seas, serenes, swords, shots, sickness, all are there.  
*Ben Jonson.*

From the equal distribution of the phlegmatick humour will flow quietude and serenitude in the affections.  
*Wotton.*

Spirits live inspired  
In regions mild of calm and *serene* air.  
*Milton.*

There wanted yet a creature might erect  
His stature, and upright with front *serene*  
Govern the rest.  
*Id.*

These eyes that roll in vain,  
So thick a drop *serene* hath quenched their orbs.  
*Id.*

A general peace and *serenity* newly succeeded a general trouble and cloud throughout all his kingdoms.  
*Temple.*

Whatever practical rule is generally broken, cannot be supposed innate; it being impossible that men would, without shame or fear, confidently and *serenely* break a rule which they could not but evidently know that God had set up.  
*Locke.*

I cannot see how any men should ever transgress those moral rules, with confidence and *serenity*, were they innate, and stamped upon their minds.  
*Id.*

Take care  
The muddy beverage to *serene*, and drive  
Precipitate the baser ropy lees.  
*Philip.*

Exciting them, by a due remembrance of all that is past, unto future circumspection, and a *serene* expectation of the future life.  
*Grew's Cosmologia.*

The nymph did like the scene appear,  
*Serenely* pleasant, calmly fair:  
Soft fell her words as flew the air.  
*Prior.*

In the constitution of a perpetual equinox, the best part of the globe would be desolate; and, as to that little that would be inhabited, there is no reason to expect that it would constantly enjoy that admired calm and *serenity*.  
*Bentley.*

The moon, *serene* in glory, mounts the sky.  
*Pope.*

The setting sun now shone *serenely* bright.  
*Id.*

Pure *serenity* apace  
Induces thought and contemplation still.  
*Thomson.*

A black cloud hangs hovering over their minds; which, when it falls in showers through their eyes, is dispersed, and all within is *serene* again.  
*Mason.*

Can hopes of Heaven, bright prospects of an hour  
That come to waft us out of Sorrow's power,

Obscure or quench a faculty that finds  
Is happiest soil in the *serenest* minds?  
Religion curbs indeed its wanton play,  
And brings the trifler under rigorous sway.  
*Cowper.*

SERENE is also a title of honor given to several princes, and to the principal magistrates of republics. The king of Britain, and the children of the king of Spain, are called most serene; as were also the late republic and doge of Venice: and, when the pope or the sacred college write to emperors or kings, they give them no other titles.

SERENUS SAMMONICUS, a celebrated physician, who flourished in the reigns of Severus and Caracalla, about A. D. 200. He wrote several treatises on history and the works of nature; but there is only one poem extant, On the Remedies of Diseases. The best edition is that of Amsterdam, in 8vo., 1706. He was murdered, at a festival, by the order of Caracalla. He had a library that contained 62,000 volumes, which Quintus Serenus Sammonicus, his son, gave to Gordian the Younger, to whom he was preceptor.

SERERES, a tribe of the Joloffs, in Western Africa, inhabiting the country in the vicinity of Cape Verd. They are dispersed into small republics, which unite into one body against a common enemy, and go naked. They appear to have few or no ideas of religion; but seem an inoffensive industrious people, and hospitable to strangers.

SERES, or SIRUS, a large inland town of modern Macdon, situated in an elevated plain, at some distance to the east of the ancient Strymon, now the Carasou or Pondus. It has a number of handsome mosques, baths, and other public edifices. Its manufacture of towels and strong

linen cloth is the most noted in the Levant: those of cotton stuffs are also very extensive. The surrounding district is fertile in cotton, tobacco, and different kinds of corn and fruit. It is to this fertility, and the health of the situation, that the town owes its increase. It is the residence of a Greek archbishop. Population 30,000. Forty-five miles north-east of Salonica.

SERGE, *n. s.* Fr. *serge*; Span. *xerga*, which Covaruvias derives from Arab. *xirica*, Skinner from Germ. *serge*, a mat. A kind of woollen cloth.

The same wool one man felts into a hat another weaves into cloth, another into kersey or *serge*, and another into arras. *Hale.*

Ye weavers, all your shuttles throw,  
And bid broad-cloths and *serges* grow. *Gay.*

SERGE is a woollen quilted stuff, manufactured commonly on a loom with four treddles, after the manner of rateens, and other stuffs that have a wale. The goodness of serges is known by the quilting, as that of cloth by the spinning. Of serges there are various kinds, denominated either from the different qualities thereof or from the places where they are wrought. The most considerable is the London serge, highly valued abroad, particularly in France, where a manufacture is carried on with considerable success, under the title of *serge facon de Londres*. The method of making the London serge is as follows:—For wool, the longest is chosen for the warp, and the shortest for the woof. Before either kind is used it is first scoured, by putting it in a copper of liquor, somewhat more than lukewarm, composed of three parts of fair water and one of urine. After having staid long enough therein for the liquor to dissolve, and had the grease taken off, &c., it is stirred briskly about with a wooden peel; taken out of the liquor, drained, and washed in a running water, dried in the shade, beaten with sticks on a wooden rack to drive out the coarser dust and filth, and then picked clean with the hands. Thus far prepared, it is greased with oil of olives, and the longest part, destined for the warp, is combed with large combs, heated in a little furnace for the purpose. To clear off the oil again, the wool is put in a liquor composed of hot water with soap melted therein: whence being taken out, wrung, and dried, it is spun on a wheel. The shorter wool, intended for the woof, is only carded on the knee with small cards, and then spun on the wheel, without being scoured of its oil. It must be remarked that the thread for the warp is always to be spun much finer, and better twisted than that of the woof. The wool, both for the warp and the woof, being spun, and the thread divided into skeins, that of the woof is put on spools (unless it has been spun upon them) fit for the cavity or eye of the shuttle; and that for the warp is wound on a kind of wooden bobbins, to fit it for warping. When warped, it is stiffened with a kind of size, whereof that made of the shreds of parchment is held the best; and when dry is put on the loom. When mounted on the loom, the workman raising and lowering the threads (which are passed through a reed), by means of four treddles placed underneath the loom, which he makes to act trans-

versely, equally, and alternately, one after another, with his feet, in proportion as the threads are raised and lowered, throws the shuttle across from one side to the other; and each time that the shuttle is thrown, and the thread of the woof is crossed between those of the warp, strikes it with the frame to which the reed is fastened, through those teeth the threads of the warp pass; and this stroke he repeats twice or thrice, or even more, till he judges the crossing of the serge sufficiently close: thus he proceeds till the warp is all filled with woof. The serge now taken off the loom is carried to the fuller, who scours it in the trough of his mill with a kind of fat earth, called fuller's earth, first purged of all stones and filth. After three or four hours' scouring, the fullers' earth is washed out in fair water, brought by little and little into the trough, out of which it is taken when all the earth is cleared: then, with a kind of iron pincers, or pliers, they pull off all the knots, ends, straws, &c., sticking out on the surface on either side, and then return it into the fulling trough, where it is worked with water somewhat more than lukewarm, with soap dissolved therein, for nearly two hours; it is then washed out till the water becomes quite clear, and there be no signs of soap left; then it is taken out of the trough, the knots, &c., again pulled off, and then put on the tenter to dry, taking care as fast as it dries to stretch it out both in length and breadth till it be brought to its just dimensions. When well dried, it is taken off the tenter, and dyed, shorn, and pressed.

SER'GEANT, *n. s.* } Fr. *sergent*; Ital. *ser-*  
SER'GEANTY,      } *gente*; from Lat. *ser-*  
SER'GEANTS'HIP.      } *viens*. An officer whose  
business it is to execute the commands of  
others; his office: for the legal use see below.

When it was day, the magistrates sent the *ser-*  
*geants*, saying, Let these men go. *Acts xvi. 35.*  
Had I but time, as this fell *sergeant*, Death,  
Is strict in his arrest, oh ! I could tell.

*Shakspeare. Hamlet.*

This is the *sergeant*,  
Who like a good and hardy soldier fought.

*Id. Macheth.*

None should be made *sergeants* but such as proba-  
bly might be held fit to be judges afterwards.

*Bacon.*

Grand *sergeantry* is that where one holdeth lands of the king by service, which he ought to do in his own person unto him: as to bear the king's banner or his spear, or to lead his host, or to be his marshal, or to blow a horn, when he seeth his enemies invade the land; or to find a man at arms to fight within the four seas, or else to do it himself; or to bear the king's sword before him at his coronation; or on that day to be his sewer, carver, butler, or chamberlain. Petit *sergeantry* is where a man holdeth land of the king, to yield him yearly some small thing towards his wars; as a sword, dagger, bow, knife, spear, pair of gloves of mail, a pair of spurs, or such like. *Cowell.*

SERGEANT, in war, is an uncommissioned officer in a company of foot or troop of dragoons, armed with a halberd, and appointed to see discipline observed, to teach the soldiers the exercise of their arms, to order, straighten, and form their ranks, files, &c. He receives the orders

from the adjutant, which he communicates to his officers. Each company generally has two serjeants.

**SERJEANT AT ARMS, or MACE**, an officer appointed to attend the person of the king; to arrest traitors, and such persons of quality as offend; and to attend the lord high steward when sitting in judgment on a traitor. Of these, by stat. 13 Rich. II. c. 6, there are not to be above thirty in the realm. There are ordinarily nine at court called the king's serjeants at arms, to distinguish them from others, who are created with great ceremony; the person kneeling before the king, his majesty lays the mace on his right shoulder, and says, Rise up serjeant at arms, and esquire for ever. They have besides a patent for the office, which they hold for life. They have their attendance in the presence-chamber, where the band of gentlemen pensioners wait; and, receiving the king at the door, they carry the maces before him to the chapel door, whilst the band of pensioners stand foremost, and make a lane for the king, as they also do when the king goes to the house of lords. There are four other serjeants at arms created in the same manner; one who attends the lord chancellor; a second the lord treasurer; a third the speaker of the house of commons; and a fourth the lord mayor of London on solemn occasions. They have a considerable share of the fees of honor, and travelling charges allowed them when in waiting, viz. five shillings per day when the court is within ten miles of London, and ten shillings when twenty miles from London. The places are in the lord chamberlain's gift. There are also serjeants of the mace of an inferior kind, who attend the mayor or other head officer of a corporation.

**SERJEANT AT LAW, or OF THE COIF**, is the highest degree taken at the common law, as that of doctor is of the civil law; and, as these are supposed to be the most learned and experienced in the practice of the courts, there is one court appointed for them to plead in by themselves, which is the common pleas, where the common law of England is most strictly observed: but they are not restricted from pleading in any other court, where the judges, who cannot have that honor till they have taken the degree of serjeant at law, call them brothers.

**SERJEANT, COMMON**, an officer in the city of London, who attends the lord mayor and court of aldermen on court days, and is in council with them on all occasions, within and without the precincts or liberties of the city. He is to take care of orphans' estates, either by taking account of them, or to sign their indentures, before their passing the lord mayor and court of aldermen: and he was likewise to let and manage the orphans' estate according to his judgment, to their best advantage. See RECORDER.

**SERGEANT MAJOR**, a non-commissioned officer subordinate to the adjutant.

**SERGEANTY**, *sergentia*, signifies, in law, a service that cannot be due by a tenant to any lord but the king. Though all tenures are turned into soccage, by 12 Car. II. c. 24, yet the honorary services of grand serjeantry still remain, being therein excepted. See KNIGHT-SERVICE.

This word is the same with serjeantry; but it would puzzle an antiquarian to tell how or why such trifling variations of spelling have been introduced

**SERGESTES**, a sailor in Æneas's fleet, from whom the Roman family of the Sergii claimed their descent. Virg. *Æn.* v. 121.

**SERGIUS**, the surname of a patrician family of ancient Rome, which produced several great men and one great villain. See CATILINE, and **SERGIUS**.

**SERGINES**, a town of France, in the department of the Yonne: nine miles north of Sens, and thirteen and a half south of Provins.

**SERGIPO DEL REY**. See SERGIPPE.

**SERGIUS CATILINA**. See CATILINE.

**SERGIUS I.**, pope of Rome, was born at Palermo, and elected pope in 687. He died in 701, with a good reputation, after a reign of thirteen years and eight months.

**SERGIUS II.** was a native of Rome; succeeded Gregory IV. in 844; and died in 847.

**SERGIUS III.** was elected pope by the Romans in 898; but, the party of John IX. prevailing, he was driven from his seat, and did not recover it till A. D. 905. He disgraced his dignity by his vices, and died in 911.

**SERGIUS IV.** succeeded John XVIII. in 1009. He was humble and liberal minded. He died in 1112.

**SERIES**, *n. s.* Fr. *serie*; Lat. *series*. Sequence; order.

Draw out that antecedent, by reflecting briefly upon the text, as it lies in the *series* of the epistle.

*Ward of Infidelity.*

The chasms of the correspondence I cannot supply, having destroyed too many letters to preserve any *series*.

*Pope.*

This is the *series* of perpetual woe,  
Which thou, alas! and thine, are born to know.

*Id.*

**SERIES**, in general, denotes a continual succession of things in the same order, and having the same relation or connexion with each other; in this sense we say, a series of emperors, kings, bishops, &c. In natural history, a series is used for an order or subdivision of some class of natural bodies; comprehending all such as are distinguished from the other bodies of that class, by certain characters which they possess in common, and which the rest of the bodies of that class have not.

**SERIES**, in music. See MUSIC.

**SERIES**, in arithmetic and algebra, a rank or number of terms in succession, increasing or diminishing in some certain ratio or proportion. There are several kinds of series; as arithmetical, geometrical, infinite, &c. The two first of these are, however, more generally known or distinguished by the names of arithmetical and geometrical progression. These series have already been explained and illustrated in the article ALGEBRA, particularly the two first: it therefore only remains, in this place, to add a little to what has already been done to the last of these; viz. INFINITE SERIES.

**SERIES, HARMONIC**, a series of terms formed in harmonical proportion. It has been observed in the article PROPORTION, that if three numbers

be in harmonical proportion the first is to the third as the difference between the first and second is to the difference between the second and third. Let  $a$ ,  $b$ , and  $x$  be three terms in harmonical proportion; then  $a : x :: a-b : b-x$ .

$$\text{whence } a-x-b \equiv a-b-a x,$$

$$\text{and } 2ax-b \equiv ab$$

$$\text{then } x = \frac{ab}{2a-b}. \text{ Hence the}$$

first three terms of this is  $a$ ,  $b$ ,  $\frac{ab}{2a-b}$ .

Again: let  $x$  be the fourth term; to find which, in terms of  $a$  and  $b$ , we have

$$b : x :: b-\frac{a}{2a-b} : 2a-b-x$$

$$\frac{a}{2a-b} : x :: \frac{a}{a-b^2} : 2a-b-x$$

$$\text{Then } b-x = \frac{2a-b}{2a-b} \cdot x = \frac{2a-b}{2a-b-bx}$$

$$x = \frac{2a-b}{2a-b} \cdot \frac{2a-b}{3a-1-b^2} = \frac{a}{3a-a-b};$$

therefore the first four terms are  $a$ ,  $b$ ,  $\frac{ab}{a-2b}$ ,

$\frac{ab}{a-2b}$ . Whence the law of the series is obvious, and it may be continued as follows:  $a$ .

$$\frac{ab}{2a-b}, \frac{ab}{3a-2b}, \frac{ab}{4a-3b}, \frac{ab}{5a-4b}, \text{ &c.,}$$

and the ninth term is  $\frac{ab}{n-1.a-n-2}$ .

a series in harmonical proportion,  $a$  and  $b$  be two affirmative quantities, and such that  $a < b$ ; then this series, which is positive at first, will become negative as soon as  $n=2$ .  $b$  exceeds  $n-1$ .  $a$ . But, if  $a > b$ , the series will converge; and, although produced to infinity, will not become negative. Let  $a$  and  $b$  be equal to 2 and 1 respectively; then this series becomes  $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$  &c.; and, since if each term of an harmonical series be divided by the same quantity, the series will still be harmonical, therefore  $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \dots$  &c., is an harmonical series: whence the denominators of this series form a series of numbers in arithmetical progression; and conversely, the reciprocals of an arithmetical progression are in harmonical proportion.

SERIES, INFINITE, is formed by dividing the numerator of a fraction by its denominator, being a compound quantity; or by extracting the root of a surd. An infinite series is either converging or diverging. A converging series is that in which the magnitude of the several terms gradually diminish; and a diverging series is that in which the successive terms increase in magnitude. The law of an infinite series is the order in which the terms are observed to proceed. This law is often easily discovered from a few of the first terms of the series; and then the series may be continued as far as may be thought necessary, without any farther division or evolution. An infinite series is obtained by division or evolution; but, as that method is very tedious, various other methods have been proposed for performing the

same in a more easy manner; as, by assuming series with unknown coefficients, by the binomial theorem, &c.

SERIES, INFINITE, method of, by division and evolution.—Rule. Let the division or evolution of the given fraction which is to be converted into an infinite series, performed as in Chap. I. and IV. of the article ALGEBRA, and the required series will be obtained. Examples. 1.

Convert the fraction  $\frac{1}{1-x}$  into an infinite series.

$$1-x) 1 \quad (1+x+x^2+x^3+x^4, \text{ &c.}$$

$$\frac{1-x}{1-x}$$

$$\overline{x}$$

$$\overline{x-x^2}$$

$$\overline{x^2}$$

$$\overline{x^2-x^3}$$

$$\overline{x^3}$$

$$\overline{x^3-x^4}$$

$$\overline{x^4}$$

$$\overline{x^4-x^5}$$

$$\overline{x^5}$$

Hence the fraction  $\frac{1}{1-x} = 1 + x + x^2 + x^3 + x^4, \text{ &c.}$  From inspection of the terms of this series, it appears that each term is formed by multiplying the preceding term by  $x$ ; and hence it may be continued as far as may be thought necessary without continuing the division.

2. Let the fraction  $\frac{ay}{1+x}$  be converted into an infinite series.

$$1+x) ay \quad (ay - ayx + ayx^2 - ayx^3 + ayx^4, \text{ &c.}$$

$$ay+ax$$

$$\overline{-ayx}$$

$$\overline{-ayx - ayx^2}$$

$$\overline{ayx^2}$$

$$\overline{ayx^2 + ayx^3}$$

$$\overline{-ayx^3}$$

$$\overline{-ayx^3 - ayx^4}$$

$$\overline{ayx^4}$$

$$\overline{ayx^4 + ayx^5}$$

$$\overline{-ayx^5}$$

Hence  $\frac{ay}{1+x} = ay \times 1-x+x^2-x^3+x^4, \text{ &c.}$  and the law of the series is obvious.

3. Reduce the fraction  $\frac{m^2+x^2}{m+x}$  into an infinite series.

$$m+x) m^2+x^2(m-x+\frac{2x^2}{m}-\frac{2x^3}{m^2}+\frac{2x^4}{m^3}, \text{ &c.}$$

$$m^2+mx$$

$$\overline{-mx+x^2}$$

$$\overline{-mx-x^2}$$

$$\overline{2x^2}$$

$$2x^3 + \frac{2x^3}{m}$$

$$\begin{matrix} 2x^3 \\ m \\ \hline 2x^3 - 2x^4 \end{matrix}$$

$$\frac{2x^4}{m^2}, \text{ &c.}$$

$$\text{Hence } \frac{m^2 + x^2}{m + x} = m - x + \frac{2x}{m} + \frac{x^2}{1 - \frac{x}{m}} + \frac{x^4}{m^2}$$

&c., and the laws of the series is evident.

4. Convert the quantity  $\frac{a^2}{a^2 + 2ay + y^2}$  into an infinite series.

$$a^2 + 2ay + y^2 \quad (1 - \frac{2y}{a} + \frac{3y^2}{a^2} - \frac{4y^3}{a^3} + \frac{3y^4}{a^4}, \text{ &c.})$$

$$a^2 + 2ay + y^2$$

$$\begin{matrix} -2ay - y^2 \\ -2ay - 4y^2 \end{matrix}$$

$$\begin{matrix} 3y^2 + \frac{2y}{a} \\ 3y^2 + \frac{6y^3}{a^2} + \frac{3y^4}{a^3} \end{matrix}$$

$$\begin{matrix} 4y^3 \\ a \\ a^2 \end{matrix}$$

Whence  $\frac{a^2}{a^2 + 2ay + y^2} = 1 - \frac{2y}{a} + \frac{3y^2}{a^2} - \frac{4y^3}{a^3}$ , &c.; and each term is found by multiplying the preceding by  $\frac{y}{a}$  and increasing the coefficient by unity.

5. Let  $\sqrt{a^2 + x^2}$  be converted into an infinite series.

$$\begin{aligned} & \left( a^2 + x^2 \right) a + \frac{x^2}{2a} - \frac{x^4}{8a^3} + \frac{x^6}{16a^5} - \frac{x^8}{128a^7} \\ & \left( 2a + \frac{x^2}{2a} \right) \frac{x^2}{x^2} \times \frac{x^4}{4a^2} \\ & \left( 2a + \frac{x^2}{a} - \frac{x^4}{8a^3} \right) \frac{x}{4a^2} \\ & \quad \frac{x^4}{4a^2} - \frac{x^6}{8a^4} + \frac{x^8}{64a^6} \\ & a + \frac{x^2}{4a^3} + \frac{x^6}{16a^5} \left( \frac{x^6}{8a^4} - \frac{x^8}{64a^6} \right) \\ & \quad \frac{x^8}{8a^4} + \frac{x^{10}}{16a^6} - \frac{x^{12}}{64a^8} + \frac{x^{14}}{256a^{10}} \end{aligned}$$

$$\begin{aligned} & \text{Hence the square root of } a^2 + x^2 = a + \frac{x^2}{2a} - \frac{x^4}{8a^3} \\ & + \frac{x^6}{16a^5} - \frac{x^8}{128a^7}, \text{ &c.} \end{aligned}$$

In continuing the operation, those terms may be

neglected whose dimensions exceed those of the last term to which the root is to be continued.

SERIES, INFINITE, method of, by the assumption of a series with unknown coefficients.

—Rule. Assume a series with unknown coefficients to represent that required. Let this series be multiplied or involved, according to the nature of the question; and, the quantities of the same dimension being put equal to each other, the coefficients will be determined; and hence the required series will be known.

Examples. 1. Let  $\frac{1}{a-x}$  be converted into an infinite series. Assume  $\frac{1}{a-x} = A + Bx + Cx^2 + Dx^3 + Ex^4, \text{ &c.}$

Then this assumed series multiplied by  $a-x$  gives  $1 = aA + aBx + aCx^2 + aDx^3 + aEx^4, \text{ &c.} - Ax - Bx^2 - Cx^3 - Dx^4, \text{ &c.}$

Now, by equating the coefficients of the same powers of  $x$ , we have  $aA = 1, aB = 0, aC = B = 0, aD - C = 0, aE - D = 0, \text{ &c.}$  Hence

$$\begin{aligned} A &= \frac{1}{a}, B = \frac{A}{a} = \frac{1}{a^2}, C = \frac{B}{a} = \frac{1}{a^3}, D = \frac{C}{a} = \frac{1}{a^4}, E = \frac{D}{a} = \frac{1}{a^5}, \text{ &c.} \end{aligned}$$

whence, by substitution, we have  $\frac{1}{a-x} = \frac{1}{a} + \frac{x}{a^2} + \frac{x^2}{a^3} + \frac{x^3}{a^4} + \frac{x^4}{a^5}, \text{ &c.}$

2. Convert the quantity  $\frac{c^2}{c^2 + 2cy - y^2}$  into an infinite series. Let the assumed series be  $A + By + Cy^2 + Dy^3$ , which multiplied by  $c^2 + 2cy - y^2$ , gives

$$\begin{aligned} c^2 &= c^2 A + c^2 B y + c^2 C y^2 + c^2 D y^3, \text{ &c.} \\ &+ 2cA y + 2cB y^2 + 2cC y^3 \\ &- A y^2 - B y^3. \end{aligned}$$

Now, by equating the coefficients of the homologous terms, we have  $c^2 = c^2 A, c^2 B + 2cA = 0, c^2 C + 2cB - A = 0, c^2 D + 2cC - B = 0, \text{ &c.}$ ; whence  $A = 1, B = -\frac{2A}{c} = -\frac{2}{c}, C = \frac{A - 2cB}{c^3} = \frac{1 + 4}{c^2} = \frac{5}{c^2}, D = \frac{B - 2cC}{c^2} = \frac{-2 - 10}{c^3} = -\frac{12}{c^3}, \text{ &c.}$  whence  $\frac{c}{c^2 + 2cy - y^2} = 1 - \frac{2y}{c} + \frac{5y^2}{c^2} - \frac{12y^3}{c}, \text{ &c.}$

3. Required the square root of  $a^2 - x^2$ . Let  $a^2 - x^2|^{\frac{1}{2}} = A + Bx^2 + Cx^4 + Dx^6, \text{ &c.}$ , which being squared gives  $a^2 - x^2 = A^2 + 2A Bx^2 + B^2 x^4 + 2A Dx^6, \text{ &c.}$

Hence  $A^2 = a^2, 2AB + 1 = 0, B^2 + 2AC = 0, 2AD + 2BC = 0, \text{ &c.}$  Then  $A = a, B = -\frac{1}{2A} = -\frac{1}{2a}, C = -\frac{B^2}{2A} = \frac{1}{8a^3}, D = -\frac{BC}{A} = \frac{1}{16a^5}, \text{ &c.}$  whence  $a^2 - x^2|^{\frac{1}{2}} = -a\frac{x^2}{2a} - \frac{x^6}{8a^3} - \frac{x^8}{16a^5}, \text{ &c.}$

Surd and fractional quantities may be reduced to infinite series by the binomial theorem, which may be consulted. See ALGEBRA and BINOMIAL.

An infinite series may be involved to any given power, or any proposed root of a given series may be extracted by means of the following general theorem:— $z^m \propto (a + b x + c x^2 + d x^3 + e x^4, \&c., z = x^n)$ , multiplied by

$$\left. \begin{aligned} & a^m + m b a^{m-1} x + m \cdot \frac{m-1}{2} \cdot a^{m-2} b^2 \\ & \quad + m a^{m-1} c \} x^2 \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot a^{m-3} b^3 \} x^3 \\ & + m \cdot \frac{m-1}{2} \cdot 2 a^{m-2} b c \} x^4 \\ & \quad + m a^{m-1} d \} x^5 \\ & \times m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot a^{m-4} b^4 \} x^6 \\ & + m \cdot \frac{m-2}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{3} a^{m-3} b^2 c \} x^7 \\ & + m \cdot \frac{m-1}{2} \cdot a^{m-2} \{ 2 b d \} x^8 \\ & \quad + m a^{m-1} e \} x^9 \end{aligned} \right\}$$

$$\left. \begin{aligned} & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot \frac{m-4}{5} \cdot a^{m-5} b^5 \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot 4 a^{m-4} b^3 c \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot 3 a^{m-3} \{ b c^2 \} x^10 \\ & + m \cdot \frac{m-1}{2} \cdot 2 a^{m-2} \{ c d \} x^11 \\ & \quad + m a^{m-1} f \} x^12 \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot \frac{m-4}{5} \cdot \frac{m-5}{6} a^{m-6} b^6 \} x^13 \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot \frac{m-4}{5} \cdot \frac{m-5}{6} b^4 c \} x^14 \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot \frac{m-4}{5} \cdot \frac{m-5}{6} b^2 c^2 \} x^15 \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot \frac{m-4}{5} \cdot \frac{m-5}{6} b^2 d \} x^16 \\ & + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot a^{m-3} \{ 6 b c^2 \} x^17 \\ & \quad + m \cdot \frac{m-1}{2} \cdot \frac{m-2}{3} \cdot \frac{m-3}{4} \cdot \frac{m-4}{5} \cdot \frac{m-5}{6} b c d \} x^18 \\ & + m \cdot \frac{m-1}{2} \cdot a^{m-2} \{ 2 b f \} x^19 \\ & \quad + m a^{m-1} g \} x^20 \end{aligned} \right\}$$

Now each term of the given series is to be compared with the correspondent terms in the first part of the above theorem; and, by substitution in the second, several terms of the required series will be obtained.

*Example 1.*—What is the square of the series  $y - y^3 + y^5 - y^7 + \&c.?$

By comparing this with the general theorem, we find  $z = y$ ,  $a = 1$ ,  $b = 0$ ,  $c = -1$ ,  $d = 0$ ,  $g = 1$ , &c., and  $m = 2$ ; whence  $y - y^3 + y^5 - y^7 \equiv 2y^2 \times (1 - 2ax + a^2x^4 - 2cx^6)$ , &c.,  $= y^2 \times (1 - 2y^2 + 3y^4 - 4y^6)$ , &c.,  $= y^2 - 2y^4 + 3y^6 - 4y^8$ , &c.

2. Required the fourth power of the series  $1 + x + x^2 + x^3 + x^4$ , &c.

Here  $z = 1$ ,  $a = 1$ ,  $b = 1$ ,  $c = 1$ ,  $d = 1$ , and  $m = 4$ .

Then  $1 + x + x^2 + x^3$ , &c.,  $\equiv 1 + 4bx + 6b^2x^2 + 4b^3x^3 + b^4x^4$ , &c.

$$\begin{aligned} & + 4c + 12bc + 12b^2c \\ & + 4d + 6c^2 + 12bd \\ & + 12b^2d \\ & + 4e \end{aligned} \quad \dots$$

$$\equiv 1 + 4x + 10x^2 + 20x^3 + 35x^4, \&c.$$

**SERIES, RECURRING**, a series of which any term is formed by the addition of a certain number of preceding terms, multiplied or divided by any determinate numbers, whether positive or negative. Thus  $2, 3, 19, 101, 543, 2917, 15671, \&c.$ , is a recurring series, each term of which is formed by the addition of the two preceding terms, the first of which being previously multiplied by the constant quantity 2 and the other by 5. Thus the third term  $19 = 2 \times 2 + 3 \times 5$ ; the fourth term  $101 = 2 \times 3 + 19 \times 5$ , &c. The principal operation in a series of this nature is that of finding its sum.—For this purpose, the two first and two last terms of the series must be given, together with the constant multipliers. Let  $a, b, c, d, e, f, \&c.$ , be any number of terms of a series formed according to the above law, each successive term being equal to the sum of the products of the two preceding terms, the first being multiplied by the given quantity  $m$ , and the other by the given quantity  $n$ . Hence we shall have the following series of equations  $c = ma + nb$ ,  $d = mb + nc$ ,  $e = mc + nd$ ,  $f = md + ne$ , &c. Then adding these equations, we obtain  $c + d + j + \dots = m \times a + b + c + d + n \times b + c + d + e$ . Now the first member of this equation is the sum

of all the terms except the two first; the quantity by which  $m$  is multiplied, in the second member, is the sum of all the terms except the two last; and that by which  $n$  is multiplied is the sum of all the terms except the first and last. Now let  $s = \text{sum of the series}$ ; then  $s - a - b = m \times s - c - f + n \times s - a - f$ . Hence  $s = m \times c \times f \times n \times a \times f - a - b$ . Let the sum of the first seven terms of the above series be required.

Two last terms	$\{ 15671 \quad \text{First term}$	$2$
	$\{ 2917 \quad \text{Last term}$	$15671$
Sum . . . .	$18588$	Sum . . . $15673$
$m$	$2$	$n$ $5$
	$37176$	$78364$
	$78365$	
Sum . . . .	$115541$	
$- 2 + 3$		$5$
$2 + 5 - 1 = 6$	$115536$	$19256 = \text{sum of the series}$

SERIES, REVERSION OF, is the method of finding the value of the quantity whose several powers are involved in a series, in terms of the quantity which is equal to the given series. In order to this, a series must be assumed; which being involved and substituted for the quantity equal to the series, and its powers, neglecting those terms whose powers exceed the highest power to which it is proposed to extend the series. Let it be required to revert the series  $a x + b x^2 + c x^3 + d x^4 + e x^5$ , &c.  $\equiv y$ ; or, to find  $x$  in an infinite series expressed in the powers of  $y$ . Substitute  $y^n$  for  $x$ , and the indices of the powers of  $y$  in the equation will be  $n, 2 n, 3 n$ , &c., and 1, therefore  $n \equiv 1$ ; and the differences are 0, 1, 2, 3, 4, 5, &c. Hence, in this case, the series to be assumed is  $A y + B y^2 + C y^3 + D y^4$ , &c., which being involved, and substituted for the respective powers of  $x$ , then we have

$$\begin{aligned} ax &\equiv a A y + a B y^2 + a C y^3 + a D y^4, \quad \text{&c.} \\ bx^2 &\equiv + b A^2 y^2 + 2 b A B y^3 + 2 b A C y^4 + b B^2 y^4, \quad \text{&c.} \end{aligned}$$

$$\begin{aligned} cx^3 &\equiv + c A^3 y^3 + 3 c A^2 B y^4, \quad \text{&c.} \\ dx^4 &\equiv + d A^4 y^4, \quad \text{&c.} \end{aligned}$$

Whence, by comparing the homologous terms,

$$\text{we have } a A y \equiv y; \text{ therefore } A \equiv \frac{1}{a}, \quad B \equiv \frac{b}{a^2},$$

$$C \left( \equiv \frac{2 b A B + c A^3}{a} \right) \equiv \frac{2 b^2 - a c}{a^3}; \quad D \equiv$$

$$\left( \equiv \frac{2 b A C + b B^2 + 3 c A^2 B + d A^4}{a} \right) \equiv$$

$$5 a b c - 5 b^3 - a^2 d, \quad \text{&c., and consequently } x \equiv$$

$$\frac{y}{a} - \frac{b y^2}{a^2} + \frac{2 b^2 - a c}{a^3} \times y^3 - \frac{5 b^3 - 5 a b c + a^2 d}{a^4} \times y^4, \quad \text{&c.}$$

$$\text{Example 1.---Let } x = \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4}, \quad \text{&c.} \equiv$$

$y$ . Then  $a$  being in this case equal to 1,  $b \equiv -\frac{1}{2}$ ,  $c \equiv 1$ ,  $d \equiv -\frac{1}{4}$ , &c., we shall, by substituting

these values, have  $x \equiv y + \frac{y^2}{2} + \frac{y^3}{6} + \frac{y^4}{24}$  &c.

2. Let  $x = x^2 + x^3 - x^4 + x^5$ , &c.,  $\equiv y$ ; to find  $x$ . In this example we have  $x \equiv x$ ,  $a \equiv 1$ ,  $b \equiv -1$ ,  $c \equiv 1$ ,  $d \equiv -1$ , &c.; whence  $x \equiv y + \frac{1}{1} y^2 + \frac{2 - 1}{1} y^3 + \frac{-5 + 5 - 1}{1} y^4$ , &c.,  $\equiv y + y^2 + y^3 + y^4$  &c.

3. Let  $a = r \frac{x^2}{2 r} + \frac{x^4}{24 r^2} + \frac{x^6}{720 r^3} + \frac{x^8}{4032 r^4}$  &c., to find  $x$ .

Put  $r - a \equiv v$ ; then  $v = \frac{x^2}{2 r} - \frac{x^4}{24 r^3} + -\frac{x^6}{720 r^4} - \frac{x^8}{4032 r^5}$ , &c. By comparison we find

$x \equiv x^2$ ,  $y \equiv v$ ,  $a \equiv \frac{1}{2 r}$ ,  $b \equiv -\frac{1}{24 r^3}$ ,  $c \equiv \frac{1}{720 r^5}$ ,  $d \equiv -\frac{1}{4032 r^7}$ , &c.

$$\frac{-1}{24 r^3} \frac{1}{v^2} + \frac{1}{288 r^6} - \frac{1}{1440 r^8}$$

$$\text{Hence } x^2 \equiv 2 r v \frac{1}{8 r^3} v^2 + \frac{1}{32 r^5}$$

$$\begin{aligned} v^3, \quad \text{&c.} &\equiv 2 r v + \frac{1}{3} v^3 + \frac{4}{45 r} v^3 + \frac{1}{35 r^3} v^4, \\ \text{&c., whence } x &\equiv \sqrt{2 r v} \times \left( 1 + \frac{v}{12 r} + \frac{3 v}{160 r^2} + \frac{5 r^5}{896 r^3} \right) \quad \text{&c.} \end{aligned}$$

SERIES, SUMMATION OF, is the method of finding the sum of the terms of an infinite series produced to infinity, or the sum of any number of terms of such a series. The value of any arithmetical series, as  $1^2 + 2^2 + 3^2 + 4^2 \dots n^2$  varies according as ( $n$ ) the number of its terms varies: and, therefore, if it can be expressed in a general manner, it must be explicable by  $n$ , and its powers with determinate coefficients; and those powers, in this case, must be rational, or such whose indices are whole positive numbers; because the progression, being a whole number, cannot admit of surd quantities. Lastly, it will appear that the greatest of the said indices cannot exceed the common index of the series by more than unity: for, otherwise, when  $n$  is taken indefinitely great, the highest power of  $n$  would be indefinitely greater than the sum of all the rest of the terms. Thus the highest power of  $n$  in an expression exhibiting the value of  $1^2 + 2^2 + 3^2 + 4^2 \dots n^2$ , cannot be greater than  $n^3$ ; for  $1^2 + 2^2 + 3^2 + 4^2 \dots n^2$  is manifestly less than  $n^3$ , or  $n^2 + n^2 + n^2 + \dots +$ , &c., continued to  $n$  terms; but  $n^3$ , when  $n$  is indefinitely great, is indefinitely greater than  $n^3$ , or any other inferior power of  $n$ , and therefore cannot enter into the equation. This being premised, the method of investigation may be as follows:—

Example 1.—Required the sum of  $n$  terms of the series  $1 + 2 + 3 + 4 + \dots n$ . Let  $A n^2 + B n$  be assumed, according to the foregoing observations, as a universal expression for the value of  $1 + 2 + 3 + 4 + \dots n$ , where  $A$  and  $B$  represent unknown but determinate quantities. Therefore, since the equation is supposed to hold universally, whatsoever is the number of terms, it is evident that if the number of terms be increased by unity, or, which is the same thing, if  $n + 1$  be written therein instead of  $n$ , the equation will still subsist; and we shall have  $A \times n + 1^2 + B \times n + 1 \equiv 1 + 2 + 3 + 4 + \dots n + n + 1$ . From which the first equation being subtracted, there remains  $A \times n + 1 - A n^2 + B + n - 1 - B n \equiv n + 1$ ; this contracted will be  $2 A n + A + B - n + 1 \equiv 0$ ; whence we have  $2 A - 1 \times n + A + B - 1 \equiv 0$ : Wherefore by taking  $2 A - 1 \equiv 0$ , and  $A + B - 1 \equiv 0$ , we have  $A \equiv \frac{1}{2}$ , and  $B \equiv \frac{1}{2}$ ; and consequently

$$\begin{aligned} 1 + 2 + 3 + 4 + \dots n &\equiv A n^2 + B n = \frac{n^2}{2} + \\ n &\equiv \frac{n \times n + 1}{2}. \end{aligned}$$

What is the sum of the ten first terms of the series  $1 + 2 + 3$ , &c.?

$$\text{In this case } n \equiv 10, \text{ then } \frac{n \times n + 1}{2} = \frac{10 \times 11}{2} = 55.$$

2. Required the sum of the series  $1^2 + 2^2 + 3^2 \dots n^2$ , or  $1 + 4 + 9 + 16 \dots n$ . Let  $\Lambda n^3$

$+ B n^3 + C n$ , according to the aforesaid observations, be assumed  $= 1^2 + 2^2 + 3^2 \dots n^2$ ; then, as in the preceding case, we shall have  $\Delta$

$$\begin{aligned} & \times n + 1^3 + B \times n + 1^2 + C \times n + 1 = 1^2 \\ & + 2^2 + 3^2 \dots n^2 \times n + 1^2; \text{ that is, by involving } n + 1 \text{ to its several powers, } A n^3 + 3 A n^2 \\ & + 3 A n + A + B n^2 + 2 B n + B + C n \\ & + C = 1^2 + 2^2 + 3^2 \dots n^2 + n + 1^2; \text{ from which subtracting the former equation, we obtain} \\ & 3 A n^2 + 3 A n + A + 2 B n + B + C (= n + 1^2) = n^2 + 2 n + 1; \text{ and consequently } 3 \\ & A - 1 \times n^2 + 3 A + 2 B - 2 \times n + A + B \\ & + C - 1 = 0; \text{ whence } 3 A - 1 = 0, A + 2 B \\ & - 2 = 0, \text{ and } A + B + C - 1 = 0; \text{ therefore} \\ A & = \frac{1}{3}, B = \frac{2 - 3 A}{3} = \frac{1}{3}, C = 1 - A - B \\ & = \frac{1}{3}, \text{ and consequently } 1 + \frac{n^2}{n^2} + \frac{n}{n^2} + \frac{9}{n^2} + \frac{16}{n^2} \dots n^2 \\ & = \frac{n^2}{3} + \frac{n^2}{2} + \frac{n}{6}, \text{ or } \frac{n \cdot n + 1}{6} \end{aligned}$$

What is the sum of the ten first terms of the series  $1^2 + 2^2 + 3^2, \text{ &c.}$ ? Here  $n = 10$ , then

$$n \frac{n + 1 \cdot 2 n + 1}{6} = \frac{10 \times 11 + 21}{6} = 385.$$

3. Let the sum of the series  $\frac{n-1}{nR} + \frac{n-2}{nR^2} + \frac{n-3}{nR^3} \dots$  &c., be required? This series is equal to the difference of the two following:

$$\begin{aligned} \text{First, } & \frac{n}{nR} + \frac{n}{nR^2} + \frac{n}{nR^3}, \text{ &c.} = \frac{1}{R} + \frac{1}{R^2} \\ & + \frac{1}{R^3} \text{ &c.} = \frac{1-a}{r}. \end{aligned}$$

$$\begin{aligned} \text{Second, } & \frac{1}{nR} + \frac{2}{nR^2} + \frac{3}{nR^3}, \text{ &c.} = \frac{1}{n} + \\ & \frac{1}{R} + \frac{1}{R^2} + \frac{1}{R^3}, \text{ &c.} = \frac{1}{n} \times \frac{-a}{r} \times R. \end{aligned}$$

$$\begin{aligned} \text{The difference of these series is } & \frac{1-a}{r} \times \frac{R}{n} \times \\ & \frac{1-a}{r} \times \frac{a}{r}, \text{ which reduced becomes} \\ n + a - 1 \times r + a - 1 & \end{aligned}$$

$n^2$ .

To proceed farther would lead us far beyond the limits assigned for this article; we must therefore refer those who require more information on this subject to the following authors:—Bertrand's Developement, &c., vol. 1; Dodson's Mathematical Repository, vol. 1; Emerson's Algebra; Appendix to Gravesend's Algebra; Hutton's Paper on Cubic Equations and Infinite Series, in the Philosophical Transactions for 1780; Maclaurin's Fluxions; Malcolm's Arithmetic; Masere's Annuities; and Scriptores Logarithmici, &c.; De Moivre's Doctrine of Chances, and a Paper by the same author in the Philosophical Transactions, No. 240; Simpson's Algebra, Essays, Fluxions, and Miscellanies; Stirling's Summatio et Interpolatio Serierum; Syntagma Mathesios, &c.

SERINAGUR, or Gerwall, a principality of Hindostan, situated chiefly between  $30^\circ$  and  $32^\circ$  of N. lat., and between  $77^\circ$  and  $79^\circ$  of E. long. It is estimated at 140 miles in length by sixty in breadth, and is an assemblage

of hills or mountains, some of which are covered with trees, others bare rocks. The valleys are fertile, but confined. It produces the oak, and several other European trees and fruits; and a number of elephants. Previous to the invasion of Serinagur by the Nepaulese, the revenue was estimated at £65,000 per annum, and was governed by a Hindoo prince, whose authority was absolute. It produces a considerable quantity of copper and some gold. The animals used for the transport of its traffic are sheep and goats, which are loaded with small sacks, containing about twelve pounds of borax, salt, or grain, &c., and travel in flocks of 100 or 200, guarded by dogs and a few shepherds, led on by a stout ram, bearing a large bell, and travel at the rate of ten or fifteen miles per day. The natives are, generally speaking, Hindoos.

This country does not appear ever to have been conquered by the Mahometans; but tribute was frequently exacted from it. In the year 1791 the Nepaulese invaded Serinagur; but the rajah having collected about 5000 men, armed with matchlocks, bows and arrows, &c., defended the passes and a fortress called Sunggur, with such perseverance, that the invaders were compelled to retreat; but in the year 1803 the rajah of Nepal marched in person at the head of his army, and was met at the village of Gurudwara, by the Serinagur chief with a very inferior force. A bloody battle ensued, in which the latter with a number of his followers were killed. After this the Nepaulese became complete masters of the country, and divided into numerous subdivisions, over each of which they appointed a native superintendent. During the war between the Nepaulese and the British, in 1815 and 1816, a relation of the late rajah having joined the latter, was admitted as an auxiliary, and at the conclusion of the peace was re-established in his principality, and the Nepaulese compelled to resign every claim on the country. Serinagur may be therefore now considered as entirely under the British protection and influence.

SERINAGUR, the capital of the above province, is situated in a valley of three miles in length, watered by the river Alcanada. The town is about three-quarters of a mile in length. The houses, of rough stone and mud, are covered with slate, but are seldom more than two stories high. The palace of the rajah is, however, elevated to four stories. The streets are narrow and dirty, but there are some good shops. The river is about eighty yards wide in the dry season, and is crossed by means of a bridge of ropes. Except about seventy Mahometan families the inhabitants are Hindoos. On the opposite side of the river is a celebrated temple, dedicated to Ishwara, which is attended by a number of dancing girls, who are accused of being very licentious. The air is unfavorable to foreigners. Long.  $79^\circ 18' E.$ , lat.  $30^\circ 11' N.$

SERINGAPATAM, or SIRI RUNGA PATAN, a city of the south of India, once the capital of the province of Mysore, is situated at the upper end of an island of four miles in length, by one and a half in breadth, in the Cavery. It has existed as a fortress from an early period; but in the year 1610 was taken from the viceroy of

the dynasty of Bijanagur, by rajah Wadeyar, and made his capital of Mysore. His successors continued to enlarge the town, and increase its fortifications; but it was not till the reigns of Hyder Aly and Tippoo Sultan that it attained its first degree of splendor and strength. It was frequently besieged by the Mahrattas and by the Nizam, but without any other effect than compelling Hyder to pay sums of money. In February 1792 it was invested by the British and allied armies, under the command of lord Cornwallis, amounting, with their followers, to the immense number of 400,000 men. Terrified by such a host, Tippoo Sultan relinquished half his dominions, and paid the sum of three millions and a half sterling to the conquerors. In 1799, a war having again broken out between the British and Mysore, Seringapatam was again invested by the British and Nizam's forces, on the 14th of April, and was stormed about two o'clock in the afternoon of the 4th of May. On this occasion Tippoo Sultan, and nearly 8000 of his followers, fell, and the whole of his family and treasures were taken by the conquerors. Previous to the siege, the city and island are said to have contained 150,000 inhabitants; but in the following year the number of inhabitants was reduced to less than 32,000. Seringapatam has of course declined since, and, having proved unhealthy, it has been in contemplation to demolish the fortifications. By the treaty made with the allied powers, Seringapatam became the property of the British, and is now protected by a garrison, and is the residence of a judge, collector, &c. Besides the city, the island contains a very celebrated temple, dedicated to Vishnu, and a handsome garden, called the Loll Bang, in which are deposited the remains of Hyder Aly and his son Tippo Sultan under a handsome mausoleum. See MYSORE.

SERINGHAM, an island of Hindostan, formed about six miles north-west of Trinchinopoly by the river Cavery, which divides itself into two branches; that to the northward takes the name of Coleroon, but the southern branch preserves its name the Cavery. Each of these rivers, after a course of about ninety miles, falls into the sea; the Coleroon at Devicottah, and the Cavery near Tranquebar, about twenty miles from each other. In this island, facing Trinchinopoly, stood a famous pagoda surrounded by seven square walls of stone, twenty-five feet high and four feet thick. The space between the outward and second walls measured 310 feet, and so proportionably of the rest. Each enclosure had four large gates, with a high tower; which were placed, one in the middle of each side of the enclosure, and opposite to the four cardinal points. The outward wall was about four miles in circumference, and its gateway to the south was ornamented with pillars, some of which were single stones thirty-three feet in length and five in diameter; while those that formed the roof were still larger; and in the inmost enclosure were the chapels. About half a mile to the east was another large pagoda called Jumbikistna, which had but one enclosure. The pagoda of Seringham was held in great veneration, from a belief that it contained the

identical image of the god Vishnu; and pilgrims came here from all parts of India with offerings of money to procure absolution. A large part of the revenue of the island was allotted for the maintenance of the Brahmins who inhabited the pagoda; and these, with their families, formerly amounted to no fewer than 40,000 persons, all maintained by the superstitious liberality of the adjacent country.

SERIOLA, in botany, a genus of plants belonging to the order of polygamia æqualis, and to the class of syngenesia; natural order forty-ninth, compositæ. The receptacle is paleaceous; the pappus is somewhat plumose. There are four species. 1. S. Æthnensis, a native of Italy. 2. S. Cretensis, a plant of Crete. 3. S. levigata, another native of Crete or Candia, which flowers in July and August. 4. S. urens, the burning seriola, is a native of the South of Europe.

SERIOUS, *adj.* Fr. *scriveur*; Lat. *serius*.

SERIOUSLY, *adv.* Grave; solemn; not vo-

SERIOUSNESS, *n.s.* Latile, or light of behaviour: the adverb and noun substantive corresponding.

I'll hence to London on a *serious* matter.

*Shakspeare. Henry VI.*

There's nothing *serious* in mortality!

All is but toys. *Id. Macbeth.*

All laugh to find

Unthinking plainness so o'erspread thy mind,  
That thou couldst *seriously* persuade the crowd  
To keep their oaths, and to believe a God. *Dryden.*

It cannot but be matter of very dreadful consideration to any one, sober and in his wits, to think seriously with himself, what horror and confusion must needs surprise that man, at the last day of account, who had led his whole life by one rule, when God intends to judge him by another. *South.*

Justin Martyr, Tertullian, Lactantius, and Arnobius, tell us, that this martyrdom first of all made them seriously inquisitive into that religion, which could induce the mind with so much strength, and overcome the fear of death, nay, raise an earnest desire of it, though it appeared in all its terrors. *Addison.*

The youth was received at the door by a servant, who then conducted him with great silence and seriousness to a long gallery, which was darkened at noon day. *Id. Spectator.*

That spirit of religion and seriousness vanished all at once, and a spirit of libertinism and profane ness started up in the room of it. *Atterbury's Sermons.*

Ah! my friends, while we laugh, all things are serious round about us: God is serious, who exerciseth patience towards us: Christ is serious, who shed his blood for us; the Holy Ghost is serious, who striveth against the obstinacy of our hearts; the holy Scriptures bring to our ears the most serious things in the world; the Holy Sacraments represent the most serious and awful matters; the whole creation is serious in serving God, and us; all that are in heaven or hell are serious; how then can we be gay? To give these excellent words their full force, it should be known that they came not from the priesthood, but the court: and from a courtier as eminent as England ever boasted. *Young.*

SERIPERES, the lowest and most degraded class of the meanest tribe of Hindoos. See PARTAS.

SERIPHIA RANA, a proverbial saying concerning a person who can neither sing nor say; frogs in Seriphis being said to be dumb.—Pliny.

SERIPHI, the ancient people of Seriphis, who, together with the Siphni, joined Greece against Xerxes, and were almost the only islanders who refused to give him earth and water in token of submission.—Herodotus.

SERIPIUM, in botany, a genus of plants belonging to the order of monogamia, and to the class of syngenesia: CAL. imbricated: COR. monopetalous and regular, with one oblong seed under it. There is only one species. S. cinerarium, a native of the Cape of Good Hope.

SERIPIOS, or SERIPHUS, in ancient geography, one of the Cyclades or islands in the Aegian Sea, called Saxum Seripium by Tacitus, as if all a rock. It was one of the usual places of banishment among the Romans. It was on the coast of Seriphis that the chest was discovered, according to the poets, in which king Acrisius had exposed his daughter DANAE, and her son PERSEUS (see these articles). It is now called Serphos, or Sereeo.

SER'MON, n.s. & r.a. { Fr. sermon; Lat.

SERMO'INATOR. { sermo. A discourse of instruction for the edification of the people: to make sermons: a sermocinator is a preacher or speech-maker.

As for our sermons, be they never so sound and perfect, God's word they are not, as the sermons of the prophets were; no, they are but ambiguously termed his word, because his word is commonly the subject whereof they treat, and must be the rule whereby they are framed. Hooker.

Some would rather have good discipline delivered plainly by way of precept, or sermoned at large, than thus cloudily inwrapped in allegorical devices.

Spenser.

This our life, exempt from public haunt,  
Finds tongues in trees, books in the running brooks,  
Sermons in stones, and good in every thing.

Shakespeare.

Come, sermon me no farther:  
No villainous bounty yet hath passed my heart.

Id. Timon.

Sermons he heard, yet not so many  
As left no time to practise any:  
He heard them reverently, and then  
His practice preached them o'er again. Crashaw.

These obstreperous sermocinators make easy impression upon the minds of the vulgar. Howel.

His preaching much, but more his practice wrought;  
A living sermon of the truths he taught. Dryden.

Many, while they have preached Christ in their sermons, have read a lecture of atheism in their practice. South.

SEROUS, adj. { Fr. scieux; Lat. serosus.  
SEROSITY, n.s. { Thin; watery: the noun substantive corresponding.

In these the salt and lixiviated serosity is divided between the guts and the bladder; but it remains undivided in birds. Browne.

The tumour of the throat, which occasions the difficulty of swallowing, and breathing, proceeds from a serosity obstructing the glands, which may be watery, oedematose, or sanguinous, according to the viscosity of the humour. Arbuthnot.

This disease is commonly an extravasation of serum, received in some cavity of the body; for there may be also a dropsy by a dilatation of the serous vessels, as that in the ovarium. Id. on Diet.

SERPENS, in astronomy, a constellation in the northern hemisphere, called also serpens ophiuchi. See ASTRONOMY.

SERPENS, the serpent, in the Linnaean system of zoology, an order of animals belonging to the class of amphibia, and comprehending six genera, viz. the CROTALUS, or rattle-snake; the BOA; the COLUBER, or viper; the ANAIS, or snake; the AMphisbena, or annulated snake; and the CAECILIA, or tentaculated snake, the body and tail of which are wrinkled, without scales, and the upper part furnished with two feelers. See these articles. The characters of serpents are these: they are amphibious animals, breathing through the mouth by means of lungs only; having a tapering body, no distinct neck; the jaws not articulated, but dilatable, and destitute of feet, fins, and ears.

SERPENS BICEPS, the double-headed snake; a monster of the serpent kind, there being no permanent species of this conformation. That represented by Edwards came from the island of Barbadoes; and was said to have been taken out of an egg of the size of a small pullet's egg by a man who found it under ground as he was digging. The heads were not in an horizontal position when the snake lay on its belly, but inclined to each other on their under sides, leaving an opening for the throat to come in between the two heads underneath. The upper side, for the whole length, was covered with small scales, falling one over another; the belly was covered with single scales running across it, in the form of half rings. It was all over of a yellowish color, without any spots or variation. Mr. Edwards also informs us that a person brought to him a common English snake, which had two heads quite separate from each other, the necks parting about an inch from the head.

SERPENT, n.s. { Lat. serpens. An animal

SERPENTINE, adj. { mal that moves by undulation without legs: the adjective corresponding See below.

His hand the' adorned firmament displayed,  
Those serpentine yet constant motions made. Sandys.

I craved of him to lead me to the top of this rock, with meaning to free him from so serpentine a companion as I am. Sidney.

She was arrayed all in lily white,  
And in her right hand bore a cup of gold,  
With wine and water filled up to the height;  
In which a serpent did himself enfold,

That horror made to all that did behold. Faerie Queene.

She struck me with her tongue,  
Most serpent-like, upon the very heart.

Shakespeare. King Lear.

Nor can the sun  
Perfect a circle, or maintain his way  
One inch direct; but where he rose to-day  
He comes no more, but with a cozening line  
Steals by that point, and so is serpentine. Donne.

Accept in good part a bottle made of a serpentine stone, which hath the quality to give any wine or water, that should be infused therein for four-and-twenty-hours, the taste and operation of the spa-

water, and is very medicinable for the cure of the spleen and gravel. *Wotton.*

They, or under ground, or circuit wide,  
With serpent error wandering, found their way. *Milton.*

Nothing wants but that thy shape  
Like his, and color *serpentine*, may shew  
Thy inward fraud. *Id. Paradise Lost.*  
This is ours is described with legs, wings, a *serpentine* and winding tail, and a crest or comb somewhat like a cock. *Browne.*

The figures and their parts ought to have a *serpentine* and flaming form naturally: these sorts of outlines have I know not what of life and seeming motion in them, which very much resembles the activity of the flame and *serpent*. *Dryden.*

How many spacious countries doth the Rhine,  
In winding banks, and mazes *serpentine*,  
Traverse, before he splits in Belgia's plain,  
And, lost in sand, creeps to the German main! *Blackmore.*

There were three species of this (the *serpent stone*) known among the ancients, all resembling one another, and celebrated for the same virtues. The one was green, variegated with spots of black, thence called the black ophites; another, called the white ophites, was green also, but variegated with spots of white: the third was called tephria, and was of a grey color, variegated with small black spots. The ancients tell us that it was a certain remedy against the poison of the bite of *serpents*; but it is now justly rejected. *Hill's Materia Medica.*

SERPENTS, ANCIENT ACCOUNTS OF. The serpent has from the beginning been the enemy of man; and it has hitherto continued to terrify and annoy him, notwithstanding all the arts which have been practised to destroy it. Formidable in itself, it deters the invader from the pursuit; and, from its figure, capable of finding shelter in a little space, it is not easily discovered by those who would venture to encounter it. Thus possessed at once of potent arms, and inaccessible or secure retreats, it baffles all the arts of man, though ever so earnestly bent upon its destruction. For this reason, there is scarcely a country in the world that does not still give birth to this poisonous brood. Mankind have driven the lion, the tiger, and the wolf, from their vicinity; but the snake and the viper still defy their power. Their numbers, however, are thinned by human assiduity. In none of the countries of Europe are they sufficiently numerous to be truly terrible. The various malignity that has been ascribed to European serpents of old is now utterly unknown; there are not above three or four kinds that are dangerous, and their poison operates in all in the same manner. The drowsy death, the starting of the blood from every pore, the insatiable and burning thirst, the melting down the solid mass of the whole form into one heap of putrefaction, said to be occasioned by the bites of African serpents, are horrors with which we are entirely unacquainted. But though we have thus reduced these dangers, having been incapable of wholly removing them, in other parts of the world they still rage with all their ancient malignity. In the warm countries within the tropics, as well as in the cold regions of the north, where the inhabitants are few, the serpents propagate in equal proportion. But of all countries those regions have them in the greatest

abundance where the fields are unpeopled and fertile, and where the climate supplies warmth and humidity. All along the swampy banks of the Niger or Oronoco, where the sun is hot, the forests thick, and the men but few, the serpents cling among the branches of the trees in infinite numbers, and carry on an unceasing war against all other animals in their vicinity. Travellers have assured us that they have often seen large snakes twining round the trunk of a tall tree, encompassing it like a wreath, and thus rising and descending at pleasure. We cannot, therefore, reject as wholly fabulous, the accounts given by the ancients of the terrible devastations committed by single serpents. It is probable, in early times, when the arts were little known, and mankind were but thinly scattered over the earth, that serpents, continuing undisturbed possessors of the forest, grew to an amazing magnitude; and every other tribe of animals fell before them. It then might have happened that serpents reigned the tyrants of a district for centuries together. To animals of this kind, grown by time and rapacity to 100 or 150 feet in length, the lion, the tiger, and even the elephant itself, were but feeble opponents. That horrible factor, which even the commonest and the most harmless snakes are still found to diffuse, might, in these larger ones, become too powerful for any living being to withstand; and, while they preyed without distinction, they might thus also have poisoned the atmosphere around them. In this manner, having for ages lived in the hidden and unpeopled forest, and finding the quantity of their prey decreasing, they might venture boldly from their retreats into the more cultivated parts of the country, and carry consternation among mankind. We have many histories of antiquity representing such facts, and exhibiting a whole nation sinking under the ravages of a single serpent. At that time man had not learned the art of uniting the efforts of many to effect one great purpose. The animal was therefore to be singly opposed by him who had the greatest strength, the best armor, and the most undaunted courage. In such an encounter, hundreds must have fallen; till one, more lucky than the rest, by a fortunate blow, or by taking the mouster in its torpid interval, and surcharged with spoil, might kill, and thus rid his country of the destroyer. Such was the original occupation of heroes; and those who first obtained that name, from their destroying the ravagers of the earth, gained it much more deservedly than their successors, who acquired their reputation only for their skill in destroying each other. But, as we descend into more enlightened antiquity, we find these animals less formidable, as being attacked in a more successful manner. While Regulus led his army along the banks of the river Bagrada, in Africa, an enormous serpent disputed his passage over it. Pliny says that it was 120 feet long, and that it had destroyed many of the army. At last, however, the battering engines were brought out against it; and these assailing it at a distance, it was soon destroyed. Its spoils were carried to Rome, and the general was decreed an ovation for his success. There are, perhaps, few facts better ascertained in his-

tory than this: an ovation was a remarkable honor; and was given only for some signal exploit that did not deserve a triumph. See OVATION. The skin was kept for several years after in the capitol; and Pliny says he saw it there. At present, indeed, such ravages from serpents are scarce seen in any part of the world; not but that in Africa and America, some of them are powerful enough to brave the assaults of men to this day.

If we take a survey of serpents in general, they have marks by which they are distinguished from all the rest of animated nature. They have the length and the suppleness of the eel, but want fins to swim with; they have the scaly covering and pointed tail of the lizard, but they want legs to walk with; they have the crawling motion of the worm, but, unlike that animal, they have lungs to breathe with: like all the reptile kind, they are resentful when offended; and nature has supplied them with terrible arms to revenge every injury. 1. Though they are possessed of very different degrees of malignity, yet they are all formidable to man, and have a strong similitude of form to each other. With respect to their conformation, all serpents have a very wide mouth in proportion to the size of the head; and can gape and swallow the head of another animal which is three times as big as their own. However, it is no way surprising that the skin of the snake should stretch to receive so large a morsel; the wonder seems how the jaws could take it in. But the jaws of this animal do not open as ours, where bones are applied to bones, and play upon one another: on the contrary, the serpent's jaws are held together at the roots by a stretching muscular skin; by which means they open as widely as the animal chooses to stretch them, and admit of a prey much thicker than the snake's own body. The throat dilates to admit the morsel; the stomach receives it in part, and the rest remains in the gullet, till putrefaction and the juices of the serpent's body unite to dissolve it. 2. Some serpents have fangs or canine teeth, and others are without them. The teeth in all are crooked and hollow; and, by a peculiar contrivance, are capable of being erected or depressed at pleasure. 3. The eyes of all serpents are small, if compared to the length of the body; and though differently colored in different kinds, yet the appearance of all is malign and heavy; and, from their known qualities, they strike the imagination with the idea of a creature meditating mischief. In some the upper eyelid is wanting, and the serpent winks only with that below; in others, the animal has a nictitating membrane of skin, resembling that which is found in birds, which keeps the eye clean and preserves the sight. The substance of the eye in all is hard and horny; the crystalline humor occupying a great part of the globe. 4. The holes for hearing are very visible in all: but there are no conduits for smelling, though it is probable that some of them enjoy that sense in tolerable perfection. The tongue in all these animals is long and forked. It is composed of two long fleshy substances, which terminate in sharp points, and are very pliable. At the root it is connected very strongly to the neck by two

tendons, that give it a variety of play. Some of the viper kind have tongues a fifth part the length of their bodies; they are continually darting them out; but they are entirely harmless, and only frighten those who are ignorant of the real situation of their poison. 6. If from the jaws we go on to the gullet, we shall find it very wide for the animal's size, and capable of being distended to a great degree; at the bottom of this lies the stomach, which is not so capacious, and receives only a part of the prey, while the rest continues in the gullet for digestion. When the substance in the stomach is dissolved into chyle, it passes into the intestines, and thence goes to nourishment, or to be excluded by the vent. 7. Like most other animals, serpents are furnished with lungs, which seem serviceable in breathing, though we cannot perceive the manner in which this operation is performed; for though serpents are often seen apparently to draw in their breath, yet we cannot find the smallest signs of their ever respiring it again. Their lungs, however, are long and large, and doubtless are necessary to promote their languid circulation. 8. The heart is formed as in the tortoise, the frog, and the lizard kinds, so as to work without the assistance of the lungs. It is single; the greatest part of the blood flowing from the great vein to the great artery by the shortest course. By this contrivance we easily gather two consequences; that snakes are amphibious, being equally capable of living on land and in the water; and that also they are torpid in winter, like the bat, the lizard, &c. 9. The vent in these animals serves for the emission of the urine and the faeces, and for the purposes of generation. The instrument of generation in the male is double, being forked like the tongue; the ovaries in the female are likewise double; and the aperture is very large, in order to receive the double instrument of the male. They copulate in their retreats. 10. As the body of this animal is long, slender, and capable of bending in every direction, the number of joints in the back-bone are very numerous. In the generality of quadrupeds they amount not to above thirty or forty; in the serpent kind they amount to 145 from the head to the vent, and twenty-five more from that to the tail. The number of these joints must give the back-bone a surprising degree of pliancy; but this is increased by the manner in which each of these joints is locked into the other. In man and quadrupeds the flat surfaces of the bones are laid one against the other, and bound tight by sinews; but in serpents the bones play one within the other, like ball and socket, so that they have full motion upon each other in every direction. 11. Though the number of joints in the back-bone is great, yet that of the ribs is still greater; for, from the head to the vent, there are two ribs to every joint, which makes their number 290 in all. These ribs are furnished with muscles, four in number; which, being inserted into the head, run along to the end of the tail, and give the animal great strength and agility in all its motions. 12. The skin also contributes to its motions, being composed of a number of scales, united to each other by a transparent membrane, which grows harder as it

grows older, until the animal changes, which is generally done twice a-year. This cover then bursts near the head, and the serpent creeps from it by an undulatory motion, in a new skin much more vivid than the former. If the old slough be then viewed, every scale will be distinctly seen like a piece of net-work, and will be found greatest where the part of the body they covered was largest. There is much geometrical neatness in the disposal of the serpent's scales, for assisting the animals' sinuous motion. As the edges of the foremost scales lie over the ends of their following scales, so those edges, when the scales are erected, which the animal has a power of doing in a small degree, catch in the ground, like the nails in the wheel of a chariot, and so promote and facilitate the animal's progressive motion. The erecting these scales is by means of a multitude of distinct muscles, with which each is supplied, and one end of which is tacked each to the middle of the foregoing. In some of the serpent kind there is the exactest symmetry in these scales; in others they are disposed more irregularly. In some there are larger scales on the belly, and often answering to the number of ribs; in others, however, the animal is without them. Upon this slight difference Linnaeus has founded his distinction of the various classes of the serpent tribe. 13. When we come to compare serpents with each other, the first distinction appears in their size; no other tribe of animals differing so widely in this particular. This tribe, like that of fishes, seems to have no bounds put to their growth: their bones are in a great measure cartilaginous, and they are consequently capable of great extension: the older, therefore, a serpent becomes, the larger it grows; and, as they seem to live to a great age, they arrive at an enormous size. Legnat assures us that he saw one in Java that was fifty feet long. Carli mentions their growing to above forty feet; and we have now the skin of one in the British Museum that measures thirty-two. Mr. Wentworth, who had large concerns in the Berbices in America, assures us that in that country they grow to an enormous length. He one day sent out a soldier, with an Indian, to kill wild fowl for the table; and they accordingly went some miles from the fort: in pursuing their game, the Indian, who generally marched before, beginning to tire, went to rest himself upon the fallen trunk of a tree, as he supposed it to be; but, when he was just going to sit down, the enormous monster began to move; and the poor savage perceiving that he had approached a *boa*, the greatest of all the serpent kind, dropped down in an agony. The soldier, who perceived at some distance what had happened, levelled at the serpent's head, and, by a lucky aim, shot it dead: however, he continued his fire until he was assured that the animal was killed; and then going up to rescue his companion, who was fallen motionless by its side, he to his astonishment found him dead likewise, being killed by the fright. Upon his return to the fort, and telling what had happened, Mr. Wentworth ordered the animal to be brought up, when it was measured, and found to be thirty-six feet long. He had the skin stuffed, and then sent to Europe as

a present to the prince of Orange, in whose cabinet it was lately to be seen at the Hague: but the skin is shrunk, by drying, two or three feet. In the East Indies they grow also to an enormous size, particularly at the island of Java, where we are assured that one of them will destroy and devour a *buffalo*. See *Boa*. 14. But it is happy for mankind that the gluttony of these frightful creatures is often their punishment; for whenever any of the serpent kind have gorged themselves in this manner, whenever their body is seen particularly distended with food, they then become torpid, and may be approached and destroyed with safety. Patient of hunger to a surprising degree, whenever they seize and swallow their prey, they seem, like surfeited gluttons, unwieldy, stupid, helpless, and sleepy: they at that time seek some retreat, where they may lurk for days together, and digest their meal in safety: the smallest effort at that time is capable of destroying them; they can scarcely make any resistance; and they are equally unqualified for flight or opposition: that is the happy opportunity of attacking them with success; at that time the naked Indian himself does not fear to assail them. But it is otherwise when this sleepy interval of digestion is over; they then issue, with famished appetites, from their retreats, and with accumulated rage, while every animal of the forest flies before them. 15. But though these animals are of all others the most voracious, and through the morsel which they swallow without chewing is greater than what any other creature, either by land or water, can devour; yet no animals upon earth bear abstinence so long as they. A single meal, with many of the snake kind, seems to be the adventure of a season; it is an occurrence of which they have been for weeks, nay sometimes for months, in patient expectation. When they have seized their prey, their industry for several weeks is entirely discontinued; the fortunate capture of an hour often satisfies them for the remaining period of their annual activity. As their blood is colder than that of most other terrestrial animals, and as it circulates but slowly through their bodies, so their powers of digestion are but feeble. Their prey continues, for a long time, partly in the stomach, partly in the gutlet, and is often seen in part hanging out of the mouth. In this manner it digests by degrees; and in proportion as the part below is dissolved, the part above is taken in. It is not therefore till this tedious operation is entirely performed that the serpent renews its appetite and its activity. But, should any accident prevent it from issuing once more from its cell, it still can continue to bear famine for weeks, months, nay for years together. Vipers are often kept in boxes for six or eight months without any food whatever (see *ABSTINENCE*); and there are little serpents sometimes sent over to Europe from Grand Cairo that live for several years in glasses and never eat at all, nor even stain the glass with their excrements. 16. Other creatures have a choice in their provision; but the serpent indiscriminately preys upon all; the *buffalo*, the *tiger*, and the *gazelle*. One would think that the porcupine's quills might be sufficient to protect

it; but whatever has life serves to appease the hunger of these devouring creatures; porcupines, with all their quills, have often been found in their stomachs when killed and opened; nay, they even frequently devour each other. A life of savage hostility in the forest is a most tremendous scene. In those burning countries, where the sun dries up every brook for hundreds of miles round, a lake that is never dry, or a brook that is perennial, is considered by every animal as the greatest convenience of nature. When they discover one of these, no danger can deter them from attempting to slake their thirst. Thus it becomes the place where all the hostile tribes draw up for engagement. On the banks of this spot thousands of animals are seen venturing to quench their thirst, or preparing to seize their prey. The elephants, the buffaloes, the gazelles, rely upon their swiftness; the lion and tiger wait a proper opportunity to seize; but chiefly the larger serpents are upon guard, and defend the accesses of the lake. Not an hour passes without some dreadful combat; but the serpent, defended by its scales, and capable of sustaining a multitude of wounds, is of all others the most formidable.

In comparing serpents as to their voices, some are found silent, some have a peculiar cry; but hissing is the sound which they most commonly send forth, either as a call to their kind, or as a threat to their enemies. In the countries where they abound they are generally silent in the day, when they retire from the heat of the sun; but, as the cool of the evening approaches, they are heard issuing from their cells with continued hissings. As to motion, some serpents, particularly vipers, move slowly; while others dart with amazing swiftness. The motion in all is similar; but superior strength in some gives a different appearance. The viper, that is but a slow feeble-bodied animal, makes way in a heavy undulating manner; advancing its head, then drawing up its tail behind, and bending the body into a bow; then, from the spot where the head and tail were united, advancing the head forward as before. This, which is the motion of all serpents, is very different from that of the earth-worm. The serpent has a back-bone with numerous joints; and this bone the animal has the power of bending in every direction, but without being able to shorten or lengthen it at pleasure. The earth-worm has no back-bone; but its body is composed of rings, which, like a harper's puff, it can lengthen or shorten as it finds necessary. The earth-worm, therefore, to move forward, lengthens the body; then by the fore-part clings to the ground where it has reached, and contracts and brings up its rear: then the fore-part is lengthened again for another progression, and so on. The serpent, instead of shortening the body, bends it into an arch; and this is the principal difference between serpentine and vermicular progression. We have instanced this motion in the viper, as most easily discerned; but there are many serpents that dart with such amazing swiftness that they appear rather to leap than crawl. The manner of progression in the swiftest serpent we know, which is the jaculus, is by instantly coiling itself upon its tail, and darting thence to its

full extent: then, carrying the tail as quick as lightning to the head, coiling and darting again and thus proceeding with extreme rapidity without ever quitting the ground. Though all serpents are amphibious, some are much fonder of the water than others; and, though destitute of fins or gills, remain at the bottom, or swim along the surface, with great ease. From their internal structure we see how well adapted they are for either element: and how capable their blood is of circulating at the bottom as freely as in the frog or the tortoise. They can, however, endure to live in fresh water only; for salt is an effectual bane to the whole tribe. The greatest serpents are most usually found in fresh water where they find their prey in the greatest abundance. But that all will live and swim in liquids appears from an experiment of Rhedi, who put a serpent into a large glass vessel of wine, where it lived swimming about for six hours; though, when it was by force immersed and put under that liquid, it lived only one hour and a half. He put another in common water, where it lived three days; but, when it was kept under water, it lived only about twelve hours. Their motion there, however, is perfectly the reverse of what it is upon land; for, to support themselves upon an element lighter than their bodies, they are obliged to increase their surface in a very artificial manner. On earth their windings are perpendicular to the surface; in water they are parallel to it. Some serpents have a most horrible fetor attending them. This proceeds from two glands near the vent, like those in the weasel or polecat; and, like those animals, in proportion as they are excited by rage or by fear, the scent grows stronger. Such serpents as are most venomous are least offensive in this particular: the rattle-snake and the viper have no smell whatever: nay, we are told that at Calecut and Crangannon, in the East Indies, there are some very noxious serpents whose excrements are sought after and kept as perfumes. The Esculapian serpent is also of this number. Some serpents bring forth their young alive, as the viper; some bring forth eggs, which are hatched by the heat of their situation, as the common black snake, and the majority of the serpent tribe. The viper hatches her eggs, and brings them to maturity within her body; the snake is more premature in her productions, and sends her eggs into the light some time before the young ones are capable of leaving the shell. Thus, if either are opened, the eggs will be found in the womb, covered with their membranous shell, and adhering to each other like large beads on a string. In the eggs of both the young ones will be found, though at different stages of maturity: those of the viper will crawl and bite the moment the shell that encloses them is broke open: those of the snake are not yet arrived at their perfect form. Labat took a viper that was nine feet long, and ordered it to be opened in his presence. He then saw the manner in which the eggs of these animals lie in the womb. In this creature there were six eggs, each of the size of a goose's egg, but longer, more pointed, and covered with a membranous skin, by which also they were united to each other. Each of these eggs contained from thir-

een to fifteen young ones, about six inches long, and as thick as a goose-quill. Though the female, whence they were taken, was spotted, the young had a variety of colors very different from the parent. These little mischievous animals were no sooner let loose from the shell, than they crept about and put themselves into a threatening posture, coiling themselves up and biting the stick with which he was destroying them. In this manner he killed seventy-four young ones; those that were contained in one of the eggs escaped at the place where the female was killed, by the bursting of the egg and by getting among the bushes.

The *fascinating* power ascribed to serpents, especially to rattlesnakes, by which they are said to draw animals to them, is very curious. It has been described by so many different persons, who affirm that they have seen instances of it, and has been believed by so many men of penetration and discernment, that it deserves at least to be mentioned. The rattlesnake fixes its eyes upon an animal, such as a bird or a squirrel. When the animal spies the snake, it skips from spray to spray, hovering and approaching nearer the enemy; descending, with distracted gestures and cries, from the tops of the loftiest trees to the mouth of the snake, who opens his jaws, and in an instant swallows the unfortunate animal. The following instances of fascination have so much the appearance of fiction, that it would require a very uncommon degree of evidence to render them credible. They are extracted from a paper in the Gentleman's Magazine for 1765, p. 511, which was communicated by Mr. Peter Collinson from a correspondent in Philadelphia. 'A person of good credit was travelling by the side of a creek or small river, where he saw a ground squirrel running to and fro between the creek and a great tree a few yards distant; the squirrel's hair looked very rough, which showed he was scared, and, his returns being shorter and shorter, the man stood to observe the cause, and soon spied the head and neck of a rattlesnake pointing at the squirrel through a hole of the great tree, it being hollow; the squirrel at length gave over running, and laid himself quietly down with his head close to the snake's; the snake then opened his mouth wide, and took in the squirrel's head; upon which the man gave the snake a whip across the neck, and so the squirrel being released, he ran into the creek. When I was about thirteen years old, I lived with William Atkinson, an honest man in Bucks county, who, returning from a ride in warm weather, told us, that, while his horse was drinking at a run, he heard the cry of a blackbird, which he spied on the top of a sapling, fluttering and straining the way; he seemed unwilling to fly, and holding so fast the sprigs he was perched upon that the sapling top bent. After he had viewed the bird a few minutes, it quitted the place, and made a circle or two higher in the air, and then resumed its former standing, fluttering and crying. William thereupon rode the way the bird strained, and soon spied a large black snake in a coil, steadily eyeing the bird. He gave the snake a lash with his whip, and, this taking off the snake's eye from his prey, the charm was

broken, and away fled the bird, changing its note to a song of joy. Mr. Nicholas Scull, a surveyor, told me that when he was a young man, as he happened once to be leaning upon a fence, and looking over it, he saw a large snake in coil, looking stedfastly at him. He found himself surprised and listless immediately, and had no power for about a minute (as he thinks) but to look at the snake; and then he had the resolution to push himself from the fence, and turn away, feeling such horror and confusion as he would not undergo again for any consideration. Dr. Chew tells me, a man in Maryland was found fault with by his companion, that he did not come along; the companion, coming towards him, observed that his eyes were fixed upon a rattlesnake, which was gliding slowly towards him, with his head raised as if he was reaching up at him; the man was leaning towards the snake, and saying to himself, 'he will bite me! he will bite me!' Upon which his companion caught him by the shoulder, and pulled him about, and cried out, 'What the devil ails you? He will bite you sure enough!' This man found himself very sick after his enchantment. This fascinating power of serpents was believed by Dr. Mead and other eminent men, who certainly thought they had sufficient evidence for admitting it. Incredible, therefore, as it appears, it ought not to be rejected without examination; though, being of a very extraordinary nature, it cannot be received without unquestionable evidence. Scepticism is no less absurd than incredulity, and the true philosopher will carefully avoid both. Human knowledge is founded on observation and experience; not, however, on every man's personal observation and experience, but on the united observation and experience of all mankind. But this presupposes the credibility of human testimony in every case that does not involve an impossibility. All the laws of nature are not yet known, nor all the wonderful powers of which she is possessed. It is not more incredible, à priori, that the eye of a serpent should attract an animal, than that a magnet should attract a piece of iron, or a piece of iron attract electrical matter. The evidence of these facts rests entirely on personal observation or authentic testimony. The only thing requisite with respect to objects of testimony is, when the fact is so extraordinary as has not fallen within the observation of the generality of men, the strength of the evidence must be in proportion to the extraordinary nature of the fact. To apply this to the present case: We have the testimony of many persons that some serpents have a power of fascination; but the generality of men have never observed this; it is therefore an extraordinary fact, and requires extraordinary evidence. But the evidence is not satisfactory; therefore we do not receive it as a fact; on the other hand, it is unphilosophical to reject it à priori.

We shall subjoin the prescription of Dr. Moseley, who spent twelve years in the West Indies, and whose abilities and extensive practice very justly entitle his opinion to the attention of the public, for the cure of the bite of serpents:—'The bites and stings of all venomous animals are cured by the same local means,

which are very simple, if they were always at hand. The injured part must be instantly destroyed or cut out. Destroying it is the most safe, and equally certain; and the best application for that purpose is the lapis infernalis, or the butter of antimony. These are preferable to a hot iron, which the ancients used; because a hot iron forms a crust, which acts as a defence to the under parts, instead of destroying them. The lapis infernalis is much better than any other caustic, as it melts and penetrates during its application. The bitten part must be destroyed to the bottom, and, where there is any doubt that the bottom of the wound is not sufficiently exposed, butter of antimony should be introduced into it on the following day, as deep as possible; and incisions should be made to lay every part open to the action of these applications. Besides destroying, burning, or cutting out the part, incisions should be made round the wound, to prevent the communication of the virus. The wound is to be dressed for some time with poultices, to assuage the inflammation caused by the caustics; and afterwards with acrid dressings and hot digestives to drain the injured parts. Where the above-mentioned caustics cannot be procured, corrosive sublimate, oil of vitriol, aquafortis, spirit of salt, common caustic, or a plaster made of quick lime and soap, may be applied to the wound. Gunpowder laid on the part, and fired has been used with success. When a person is bitten remote from any assistance, he should make a tight ligature about the part, until proper application can be made. The Spanish writers say, that the habilla de Carthagena, or Carthagena bean, is a specific for poisonous bites, taken inwardly. Ulloa says, it is 'one of the most effectual antidotes known in that country (Carthagena) against the bites of vipers and serpents; for a little of it being eaten, immediately after the bite, it presently stops the effect of the poison; and accordingly all who frequent the woods, either for felling trees or hunting, never fail to eat a little of this habilla fasting, and repair to their work without any apprehension. The natives tell you that, this habilla being hot in the highest degree, much of it cannot be eaten; that the common dose of is less than the fourth part of a kernel; and that no hot liquor, as wine, brandy, &c., must be drunk immediately after taking it.' The Carthagena bean, or habilla, is found in great abundance in the West Indian Islands, where it is generally known by the name of antidote or cocoon, or antidote cocoon. In small doses it is stomachic and diaphoretic; and in large doses emetic and purgative. In several disorders it is a powerful remedy; but its virtues are not sufficiently known, except among the Indians and negroes, who chiefly use an infusion or tincture of it made in rum. This is externally as well as internally used for many complaints. This bean is the seed of the fevillea foliis cordatis of Plummier, Ed. Burmanni, p. 203, tab. 209. Fevillea foliis cordatis, angulatis, of Linnaeus, Spec. P.—I have been informed by some intelligent Indians, that any of the red peppers, such as bird pepper, or bell pepper, or what is called Cayenne pepper, powdered and taken in a glass of rum as much as the stomach can possibly bear, so as to cause,

and keep up for some time, a great heat and inflammation in the body and a vigorous circulation, will stop the progress of the poison of serpents, even after its effects are visible; and that the bitten part only afterwards mortifies and separates, and that the patient, with bark, wine, and cordials, soon recovers. This fiery practice is certainly agreeable to that of the ancients, and probably the only internal treatment that can have any good effect; as in these cases the powers of life, and the actions of the heart, are suddenly enfeebled, and the pulse in strength and frequency observes almost a regular declension from the time of the bite until it entirely ceases in death.' *Polygala senega*, or rattlesnake root, was formerly considered as a sovereign remedy for the bite of the rattlesnake; but this opinion is now exploded.

No subject has excited more philosophical controversy than the poison of serpents, with regard to its nature and mode of operating. Antiquity has not been sparing in conjecture and fiction upon this subject, and its errors have been retained with the most reverential obstinacy by the vulgar; among these we are to reckon the fictitious sting fixed in the tail of the serpent; a similar fiction of a black forked tongue which the serpent vibrates on both sides, while others, affecting an air of superior discernment, have ascribed the noxious effects to the teeth in general; these are all errors which a very little attention to the subject would have removed. There is a very small bone closely fixed to the upper jaw, in the inside of the lip of a poisonous serpent, which has a power of moving backwards or forwards; to this two or three fangs are annexed, larger than the teeth, which the serpent, by its assistance, when enraged, darts forward, or withdraws and conceals at his pleasure, in a similar manner to the claws of a cat. These fangs are excellently described by Tyson in the anatomy of the rattle snake, in the Philosophical Transactions. 'In these (the fangs) we observed a considerable cavity near the base; and near the point a very discernible fissure of some length like the slit of a pen: the part of the tooth from the fissure to the root was manifestly channelled, which we first discovered by lightly pressing the gums; we then saw the poison ascend through the cavity of the fang, and flow out of the fissure; and as these fangs are so very acute, so firm and solid toward the point (the fissure being on the external and convex, not the internal side), nothing could be conceived more convenient either for inflicting a wound, or to insure the infusion of the poison.' Each of the fangs is surrounded with a vesicle furnished with glands secreting a certain fluid; which, upon the vesicle being pressed, seems to flow out of the point of the fang. The serpent when incensed, raising his head, extends the small bone armed with the fangs mentioned above; and, attacking his enemy with a force combined of the weight of his body and the action of the muscles, he wounds him with the expanded fangs, and, the vesicle being compressed, the poison immediately flows into the wound; this is clear from the experience of those, who, having broken off their fangs with

pair of forceps, handled the serpent thus disarmed without any hurt. The North Americans, after carefully extracting these venomous fangs, suffer the rattle-snake to bite and gnaw them with his teeth till the blood flows freely, with total impunity. Towards the end of the seventeenth century, this subject was greatly illustrated under the auspices of Ferdinand II., grand duke of Tuscany. This prince, desirous of enquiring into that mysterious question, the nature of serpents, invited Steno, Rhedi, and some other philosophers of the first eminence, to his court; and, a multitude of the most poisonous serpents being collected, Rhedi made several experiments upon them, which discovered to him a number of particulars before unknown; of which the following seem to have the best claim to our attention. When he either caused a living viper to bite a dog, or wounded him with the teeth of one newly dead (the poisonous vesicle remaining unbroken), the event was the same. If the bite was repeated, its effect became weaker, and at last was lost, the poison contained in the vesicle being totally exhausted. That the teeth of serpents, when extended to bite, were moistened over with a certain liquor; and, when the vesicle at the base was pressed, a drop of poison flowed to the point of the fang. When the poison thus flowing from the vesicle was received in soft bread, or a sponge, an animal bitten by the serpent received no more harm from the wound than from being pricked by a needle, till after a few days, when the venom was restored afresh; but, when an animal was wounded with a point of a needle dipped in the poison, it was tormented with the same pains as if it had been bitten by the viper itself. Preserving some of this poison in a glass, and totally evaporating the moisture in the sun, when the residuum was diluted again with water, and the point of a needle dipped in the solution, Rhedi found that it had the same effect as when recent. But the boldness of Tozzi, one who charmed vipers, flung all these men, who were deeply versed in natural philosophy, into the utmost astonishment. They happening to mention (while the prince was present) the certain death which would attend any person's swallowing this poison of the viper by mistake, Tozzi, confiding in his art, drank a considerable portion of it without hesitation; they were all astonished at his apparent rashness, and predicted instant death to him; but he was no more hurt than if he had drunk only so much water. This event, which astonished the prince and his illustrious associates, was well known to the ancients. Lucan, in the ninth book of the Pharsalia, speaking of the serpent says (Phar. l. 9, v. 614),

Mixed with the blood that venom slays alone,  
His bite is poison; death is in his fang;  
Yet is the draught innoxious.

Barbarous nations are perfectly acquainted with the property of the poison of serpents, by which it retains its deadly power after it has been long kept; they have been possessed of this fatal secret for ages; it being their custom to tinge the points of their arrows with the juice of spurge, putrid flesh, or oil of tobacco, but more particu-

larly with the poison of vipers. Some modern Indians continue the practice to this day; and we have the testimony of Pliny, in his Natural History, that the Scythians had long ago the same custom. 'The Scythians, says that author, dip their arrows in the poison of vipers and human blood; a horrid practice, as the slightest wound inflicted by one of them defies all the art of medicine.' The poison of serpents produces fatal effects only by mixing with the blood. To confirm this principle, the Florentine philosophers collected a quantity of poison and gave it to different animals without producing the least inconvenience; but, when applied to an external wound, every one of those horrid symptoms which accompany the real bite followed, viz.: inflammatory and malignant fevers, ending in death; unless nature, by a spontaneous haemorrhage, discharged this poison. With respect to the experiments of Rhedi, his observations prove that the liquid pressed out of the vesicle which moistens the fangs of the serpents is only noxious by being conveyed into the blood, by means of a puncture or wound; and the case of Tozzi proves that it hurts the blood only when externally mixed with it. The experiments of Rhedi have not, however, in the opinion of some celebrated philosophers, so far cleared the theory of the operation of the poison of the viper, as to leave nothing further to be desired upon that subject. Fontana and Carminati have endeavoured to investigate his operations more clearly. Carminati, from eleven experiments, deduces the following conclusions: 1. That if poison be instilled into a nerve the animal wounded dies almost instantly; and the whole nervous system, to which it is rapidly conveyed, is deprived of its quality called sensibility. 2. If a muscle be wounded, it is deprived of its irritability. This is confirmed by the experiments of Fontana. 3. The poison injected into a wounded muscle or tendon is considerably longer in killing an animal than that introduced into a nerve. 4. The symptoms which precede the death of the animal bitten are, stupor, lethargy, tremors, convulsions, paralysis of the legs (or part wounded) entire dissolution of the limbs. The blood is not always coagulated, nor its crasis dissolved. Marks of inflammation are sometimes discovered in certain parts of the animal after death, sometimes not. 5. Not the least sign of the jaundice was discoverable in the eyes of any of the animals upon which Carminati made his experiments. 6. The stomach in every one of them was very much inflated; a symptom remarked only by Fallopius and Albertini. 7. A ligature applied instantly above the part bitten, if it be so placed as to admit one, was found by some experiments a good preventative against the diffusion of the poison; its compression should be considerable but not excessive.

Characteristic marks have been pointed out by some writers to distinguish poisonous from harmless serpents (see Philosophical Transactions, vol. lxxix); but all of them that are drawn from the outside marks are quite ambiguous and uncertain; and those from the fangs, which afford the only decisive marks, cannot be per-

ceived at a distance. To those who form their ideas of the fangs of a venomous serpent from those of the rattle-snake, or even from those of the English viper, it will appear strange that there should be any difficulty in distinguishing those weapons in other serpents from common teeth; and indeed the distinction would be easy, were all venomous serpents furnished with fangs as large as those of that species. But the fact is, that in many species the fangs are full as small as common teeth, and consequently cannot, by their size, be known from them; this is the case with the *coluber laticaudatus lacteus*, and several others. Linnaeus thought that the fangs might be distinguished by their mobility and situation; but other naturalists have not found it a general fact that fangs are loose in their sockets, nor have they observed any difference in situation between the fangs of venomous serpents and the teeth of others. The following distinction is established by Dr. Gray, in a paper inserted in the Philosophical Transactions, vol. lxxix.:—All venomous serpents have only two rows of teeth in the upper jaw, and all others have four. If this holds true it is certainly a most decisive mark; but still it requires too near, and of course too dangerous, an inspection.

In the preface to the *Museum Regis*, and in the introduction to the class *amphibia*, in the *Systema Naturæ*, Linnaeus says, that the proportion of venomous serpents is one in ten; yet in the *Systema Naturæ*, of which the sum total in species is 131, he has marked twenty-three as venomous, which is somewhat more than one in six. How he came to make such a variation it is not easy to say; but the last mentioned proportion seems to be near the truth, as Dr. Gray, after examining 154 species of serpents, found only twenty-six that seemed to be venomous. The *coluber stolatus* and *myctericizans*, though marked by Linnaeus, we are assured by Dr. Gray are not poisonous; he thinks the same may be said of the *lebris* and *dypsas*. On the other hand he observes, that the *boa contortrix*, *coluber cerastes*, *laticaudatus*, and *coluber fulvus*, none of which are marked in the *Systema Naturæ*, are all poisonous.

Under the article *Poison* we have mentioned a variety of chemical tests for discovering the presence of poison of the mineral kingdom. We shall now supply what has been omitted in that article, by describing the symptoms which accompany the bite of serpents. The symptoms attending the bite of the *coluber prester*, a native of Sweden, are, pain in the wound, tumor, thirst, asthma, anxieties, convulsions, and death. There is a serpent still more dreadful than any of the former, found in Sweden, called *coluber carcina*. The bite of this is followed by immediate change of color, coldness, stupor, palpitation of the heart, acute pain all over the body, and death. Linnaeus tried oil in this case, but it proved ineffectual. The *crotalus horridus* of Linnaeus, the rattle-snake, kills in a very sudden manner; its bite usually producing death within twelve hours. The following account of the poison serpent of the East Indies is given by M. d'Obsonville:—‘ Among the serpents of India that which I believe to be the

most formidable is but about two feet long, and very small. Its skin is freckled with little traits of brown or pale red, and contrasted with a ground of dirty yellow: it is mostly found in dry and rocky places, and its bite mortal in less than one or two minutes. In 1759, and in the province of Cadapet, I saw several instances of it; and among others one very singular, in the midst of a corps of troops commanded by M. de Bussy. An Indian Gentoo merchant perceived a Mahometan soldier of his acquaintance going to kill one of these reptiles, which he had found sleeping under his packet, the Gentoo flew to beg its life, protesting it would do no hurt if it was not first provoked: passing at the same time his hand under its belly to carry it out of the camp, when suddenly it twisted round, and bit his little finger; upon which this unfortunate martyr of a fanatic charity gave a shriek, took a few steps, and fell down insensible. They flew to his assistance, applied the serpent stone, fire, and scarification, but they were all ineffectual, his blood was already coagulated. About an hour after I saw the body as they were going to burn it, and I thought I perceived some indications of a complete dissolution of the blood. The serpent *brulans*, or burning serpent, is nearly of the same form with the last mentioned; its skin is not quite so deep a brown, and is speckled with dark green spots: its poison is almost as dangerous, but it is less active, and its effects are very different: in some persons it is a devouring fire, which, as it circulates through the veins, presently occasions death; the blood dissolves into a lymphatic liquor resembling thin broth, without apparently having passed through the intermediate state of coagulation, and runs from eyes, nose, and ears, and even through the pores. In other subjects the poison seems to have changed the very nature of the humors in dissolving them; the skin is chapped and becomes scaly, the hair falls off, the members are tumefied, the patient feels all over his body the most racking pains and numbness, and is not long in perishing. It is said, however, that people have been cured by remedies well and soon applied. Be this as it may, it seems to me that the poison of these different reptiles is in general more powerful the more they live in hot and dry places, where they feed upon insects that are full of saline, volatile, and acrimonious particles.’ We are ignorant of what species the *haemorrhois* was, which is described by Lucan as causing by its bite a flux of blood from every part of the body. But the bite of an American serpent named *de la crux* kills in the same manner. The *dipsasias* is at present likewise unknown. Lucan informs us that the person wounded by it was attacked by unquenchable thirst. This is finely painted by him where A. Tuseus, standard-bearer of Cato, is described as bitten by that serpent: *Pharsal. lib. 9.* The *phytas* or *amodytes* of Linnaeus, or, according to others, the *coluber aspis*, seems to have been the serpent made use of by Cleopatra to destroy herself. This woman, to terminate a dissipated life with an easy death, ordered her physicians to prepare a poison for her which might best effect this purpose. Having tried a number of different experiments upon condemned

criminals, they at last discovered this species of asp, which brings on death without any previous appearance of distemper: the face seems in a slight perspiration, an easy insensibility and lethargy creeps upon the whole frame, and the person bitten seems almost totally ignorant of his approaching dissolution. Having acquainted the queen with their discovery, she applied the asp either to her bosom or her arms; or, according to some authors, dipping the point of a needle in the poison, and pricking herself with it, she expired in an easy sleep. The bite of the naja is so fatal that a man dies by it in the space of an hour, his flesh entirely falling off his bones in a semi-dissolved putrid state: this makes it probable that it is the same serpent which the ancients named the sepe.

The Psylli of old were famous for charming and destroying serpents. See PSYLLI. Some moderns pretend to the same art. Casaubon says that he knew a man who could at any time summon 100 serpents together, and draw them into the fire. Upon a certain occasion, when one of them, bigger than the rest, would not be brought in, he only repeated his charm, and it came forward like the rest, and submitted to the flames. Many other feats have been often practised upon these animals by artful men, who had first prepared the serpents for their exercise, and then exhibited them as adventitiously assembled at their call. In India there is nothing so common as dancing serpents, which are carried about in a broad flat vessel somewhat resembling a sieve. They erect and put themselves in motion at the word of command. When their keeper sings a slow tune they seem by their heads to keep time; when he sings a quicker measure they appear to move more brisk and lively. All animals have a certain degree of docility; and serpents can be brought to move at the voice of their master. From this trick, successfully practised before the ignorant, it is most probable have arisen most of the boasted pretensions which some have made to charming of serpents; an act to which the native Americans pretend at this very day, and which we are assured by Mr. Hasselquist exists amongst the native Egyptians.

If it be asked for what purpose were serpents created with such destructive weapons? we answer that they were given for self-defence. Without these, serpents, of all other animals, would be the most exposed and defenceless; without feet for escaping a pursuit, without teeth capable of inflicting a dangerous wound, or without strength for resistance; incapable from their size of finding security in very small retreats like the earthworm, and disgusting all from their deformity, nothing was left for them but a speedy extirpation. But, furnished as they are with powerful poison, every rank of animals approach them with dread, and never seize them but at an advantage. Nor is this all the benefit they derive from it. The malignity of a few serves for the protection of all. Though not above a tenth of their number are actually venomous, yet the similitude they all bear to each other excites a general terror of the whole tribe; and the uncertainty of their enemies about what serpents are poisonous, makes even the most harmless formidable. Thus

Providence seems to have acted with double precaution: it has given some of them poison for the general defence of a tribe naturally feeble; but it has thinned the numbers of those which are venomous, lest they should become too powerful for the rest of animated nature. From these noxious qualities in the serpent kind, it is no wonder that not only man, but beasts and birds, carry on an unceasing war against them. The ichneumon of the Indians, and the peccary of America, destroy them in great numbers. See SUS, and VIVERRA. These animals have the art of seizing them near the head; and it is said that they can skin them with great dexterity. The vulture and the eagle also prey upon them in great abundance; and often, sousing down from the clouds, drop upon a long serpent, which they snatch up struggling and writhing in the air. Dogs also are bred up to oppose them. Father Feuillée tells us that, being in the woods of Martinico, he was attacked by a large serpent, which he could not easily avoid, when his dog immediately came to his relief, and seized the assailant with great courage. The serpent entwined him, and pressed him so violently that the blood came out of his mouth, and yet the dog never ceased till he had torn it to pieces. The dog was not sensible of his wounds during the fight; but soon after his head swelled prodigiously, and he lay on the ground as dead. But his master having found a banana tree hard by, he applied its juice mixed with treacle to the wounds, which recovered the dog, and quickly healed his sores.

**SERPENTS, WORSHIP OF.** Though the generality of mankind regard this formidable race with horror, yet there have been some nations, and there are some at this day, that consider them with veneration and regard. The adoration paid by the ancient Egyptians to a serpent is well known: many of the nations at present along the western coast of Africa retain the same unaccountable veneration. Upon the Gold and Slave coasts, a stranger, entering the cottages of the natives, is often surprised to see the roof swarming with serpents, that cling there without molesting and unmolested by the natives. But his surprise will increase upon going farther southward to the kingdom of Whidah, where he finds that a serpent is the god of the country. This animal, which travellers describe as a huge overgrown creature, has its habitation, its temple, and its priests. These impress the vulgar with an opinion of its virtues; and numbers are daily seen to offer not only their goods, their provisions, and their prayers, at the shrine of their hideous deity, but also their wives and daughters. These priests readily accept of, and after some days of penance return them to their suppliants, much benefited by the serpent's supposed embraces. The serpent, in ancient mythology, was a very common symbol of the sun, and he is represented biting his tail, and with his body formed into a circle, to indicate the ordinary course of this luminary, and under this form it was an emblem of time and eternity. The serpent was also the symbol of medicine, and of the gods which presided over it, as of Apollo and Esculapius: and this animal was the object of very ancient and general worship, under various appellations

and characters. In most of the ancient rites we find some allusion to the serpent, under the several titles of Ob, Ops, Python, &c. This idolatry is alluded to by Moses, Lev. xx. 27. The woman of Endor who had a familiar spirit is called Oub, or Ob, and it is interpreted Pythonissa. The place where she resided, says the learned Mr. Bryant, seems to have been named from the worship then instituted: for Endor is compounded of En-ador, and signifies fons pythonis, 'the fountain of light,' the oracle of the god Ador; which oracle was probably founded by the Canaanites, and had never been totally suppressed. His pillar was also called Abbadir, or Abadir, compounded of ab and adir, and meaning the serpent deity Addir, the same as Adorus. In the orgies of Bacchus the persons who partook of the ceremony used to carry serpents in their hands, and with horrid screams call upon Eva! Eva! Eva being, according to Mr. Bryant, the same as epha, or opha, which the Greeks render ophis, and by it denoted a serpent. These ceremonies, and this symbolic worship, began among the Magi, who were the sons of Chus; and by them they were propagated in various parts. Wherever the Ammonians founded any places of worship, and introduced their rites, there was generally some story of a serpent. There was a legend about a serpent at Colchis, at Thebes, and at Delphi; and likewise in other places. The Greeks called Apollo himself Python, which is the same as Opis, Oupis, and Oub. In Egypt there was a serpent named Thermuthis, which was looked upon as very sacred; and the natives made use of it as a royal tiara, with which they ornamented the statues of Isis. The kings of Egypt wore high bonnets, terminating in a round ball, and surrounded with figures of asps; and the priests likewise had the representation of serpents upon their bonnets. Abdon, or Abaddon, mentioned in the Revelations, xx. 2, is supposed by Mr. Bryant to have been the Ophite god, with whose worship the world had been so long infected. This worship began among the people of Chaldea, who built the city of Ophis upon the Tigris, and were greatly addicted to divination, and to the worship of the serpent. From Chaldea the worship passed into Egypt, where the serpent deity was called Canoph, Caneph, and Cneph. It had also the name of Ob or Oub, and was the same as the Basiliscus or royal serpent, the same as Thermuthis, and made use of by way of ornament to the statues of their gods. The same learned writer discovers traces of the serpent worship among the Hyperboreans, at Rhodes, named Ophiusa, in Phrygia, and upon the Hellespont, in the island Cyprus, in Crete, among the Athenians, in the name of Cecrops, among the natives of Thebes in Boeotia, among the Lacedemonians, in Italy, in Syria, &c., and in the names of many places as well as of the people where the Ophites settled. One of the most early heresies introduced into the Christian church was that of the Ophita. See Bryant's Analysis of Ancient Mythology, vol. i. p. 43, &c.; p. 473, &c.

SERPENT, a musical instrument, serving as a bass to the cornet, or small shawn, to sustain a chorus of singers in a large edifice. It has its

name from its figure, as consisting of several folds or wreaths, which serve to reduce its length, which would otherwise be six or seven feet. It is usually covered with leather, and consists of three parts, a mouth-piece, a neck, and a tail. It has six holes, by means whereof it takes in the compass of two octaves. Mersennus, who has particularly described this instrument, mentions some peculiar properties of it, e. gr. that the sound of it is strong enough to drown twenty robust voices, being animated merely by the breath of a boy, and yet the sound of it may be attenuated to the softness of the sweetest voice; and that, great as the distance between the third and fourth hole appears, yet, whether the third hole be open or snut, the difference is but a tone.

SERPENTARIUS, in astronomy, a constellation of the northern hemisphere, called also Ophiuchus, and anciently Aesculapius. See ASTRONOMY.

SERPENTINE, in the manege. A horse is said to have a serpentine tongue, if it is always frisking and moving, and sometimes passing over the bit, instead of keeping in the void space called the liberty of the tongue.

SERPENTINE STONE, in the old system of mineralogy, a genus of magnesian earths, of which mineralogists enumerated four different species; 1. The fibrosus, composed of fibrous and coherent particles. This resembles the asbestos so much that it might be confounded with it, were not the fibres of the serpentine so closely coherent, that they cannot be distinguished when the stone is cut or polished. The fibres are large, and seem twisted. There are two varieties, a dark green and light one; the former from Germany, the latter from Sweden. 2. The Zoebitz serpentine, found near that place, of many different colors, as black, deep green, light green, red, bluish-gray, and white; but the green is most predominant. 3. Porcelain earth, mixed with iron, is met with either diffusible in water or indurated. The former is of a red color, from China and Montmartre. There are two varieties of the indurated kind, viz. the martial soap-earth, of a red color, from Jasberg and other places in Norway, or black from some parts of Sweden. 4. The telgston of Sweden, the same with the lapis ollaris. It is found in various places of Norway, as light and dark gray, whitish yellow, and dark green. It is employed with great advantage for building fire-places, furnaces, &c., the extremities of the strata being turned towards the fire when it is slaty. M. Magellan says, the texture of serpentine is either indistinct, obscurely laminar, or fibrous. It is harder than steatites, though not hard enough to strike fire with steel; being less smooth to the touch, but susceptible of a good polish, looking like marble; and is often met with in thin semitransparent plates. It melts in a strong heat without addition, and corrodes the crucibles, but hardens in a lower degree of heat. It is slowly and partially soluble in acids, but does not effervesce with them; has its name from being variegated with green, yellowish, and brown spots, like the skin of some serpents; great quantities of it are found in Italy and Switzerland, where it is frequently worked into dishes, &c.

SERPENTINE VERSES are such as begin and end with the same word : as,

Ambo florentes atatibus, Arcades ambo :

Or such as begin in one half of the line, and end in the other, with precisely the same letters, so that they may be read either from right to left like the Hebrew, or from left to right; as,

Otto tenet mappam, madidam mappam tenet  
Otto.

SERPENTINE WORM, the worm or pipe of a still, twisted in a spiral manner.

SERPICULA, in botany, a genus of the monœcia class and tetrandria order of plants: MALE CAL. quadridentatae: cor. consists of four petals: FEMALE CAL divided into four parts, and the pericarpium is a tomentose nut. There are two species, the verticillata and repens.

SERPIGO, n.s. Lat. *serpigo*. A kind of tetter.

For thy own bowels, which do call thee sire,  
Do curse the gout, *serpigo*, and the rheum,  
For ending thee no sooner. *Shakspeare*.

She had a node, with pains, on her right leg, and a *serpigo* on her right hand. *Wiseman*.

The skin behind her ear downwards became *serpiginous*, and was covered with white scales. *Id.*

SERPIGO, in surgery, is a kind of herpes, popularly called a tetter, or ringworm. See SURGERY.

SERPULA, in zoology, a genus belonging to the class of vermes, and to the order of testacea. The shell is single, tubular, and adhering to other bodies. The animal which inhabits it is the te-rebella.

SERR, v. a. Fr. *serrer*. To drive hard together; crowd into a little space. Disused.

The frowning and knitting of the brows is a gathering or *serring* of the spirits, to resist in some measure; and also this knitting will follow upon earnest studying, though it be without dislike.

*Bacon's Natural History.*

With them rose  
A forest huge of spears, and thronging helms  
Appeared, and *serrated* shields in thick array,  
Of death immeasurable. *Milton's Paradise Lost.*

SERRANUS, a surname given to Cincinnatus, because he was found sowing his fields, when the deputation from the senate came to inform him that he was elected dictator.

SERRANUS, a Latin poet of considerable merit, who flourished under Domitian. Juv. vii. v. 80.

SERRANUS (Joannes, or John de Serres), a learned French Protestant, born in 1548. He acquired the Greek and Latin languages at Lausanne, and grew very fond of the philosophy of Aristotle and Plato. On his return to France he studied divinity. He began to distinguish himself in 1572 by his writings, but was obliged to forsake his country after the dreadful massacre of St. Bartholomew. He became minister of Nismes in 1582, but was never regarded as a very zealous Calvinist. He was one of the four clergymen whom Henry IV. consulted about the Romish religion, and who returned for answer that Catholics might be saved. He wrote afterwards a treatise to reconcile the two communions, entitled *De fide Catholica, sive de principiis religionis Christianæ, communi omnium Christianorum consensu, semper et ubique ratis*. This

work was disliked by the Catholics, and received with such indignation by the Calvinists of Geneva that many writers affirm they poisoned the author. It is certain that he died at Geneva in 1598, aged fifty; and, his wife also dying suddenly along with him, it was suspected that both were poisoned. His principal works are, 1. A Latin translation of Plato, published by Henry Stephens, which owes much of its reputation to the elegance of the Greek copy which accompanies it. 2. A Treatise on the Immortality of the Soul. 3. *De Statu religionis et reipublicæ in Francia*. 4. *Memoire de la 3 me guerre civile et derniers troubles de France sous Charles IX., &c.* 5. *Inventaire general de l'Histoire de France, illustre par la conference de l'Eglise et de l'Empire, &c.* 6. *Recueil de choses memorablesvenues en France sous Henri II., François II., Charles IX., Henri III.* These three historical treatises have been justly accused of partiality and passion; faults which it is next to impossible for a contemporary writer to avoid, especially if he bore any part in the transactions which he describes. His style is exceedingly incorrect and inelegant; his mistakes too and misstatements of facts are very numerous.

SER'RATE, adj. Lat. *serratus*. Formed

SER'RATED, with jags or indentures

SER'RATURE. Like the edge of a saw: serrature is indenture of this kind.

All that have *serrate* teeth are carnivorous. *Ray*.

This stick is usually knotted and always armed: one of them with a curious shark's tooth near an inch long, and indented or *serrated* on both edges: a scury weapon. *Grew.*

These are *serrated* on the edges; but the *serratures* are deeper and grosser than in any of the rest.

*Woodward.*

The common heron hath long legs for wading, a long neck answerable thereto to reach prey, a wide throat to pouch it, and long toes, with strong hooked talons, one of which is remarkably *serrate* on the edge. *Derham's Physico-Theology.*

SERRATED, is a term much used in the description of the leaves of plants. See BOTANY.

SERRATULA, saw-wort, in botany, a genus of the syngenesia class, and polygamia *aqualis* order of plants; natural order forty-ninth, compositæ: CAL. subcylindrical, imbricated; the scales of it pointed, but not spinous. There are fifteen species: viz. 1. *S. Alpina*; 2. *amara*; 3. *arvensis*; 4. *centauroides*; 5. *coronata*; 6. *glaucia*; 7. *Japonica*; 8. *multiflora*; 9. *Novebora-censis*; 10. *pæralta*; 11. *salicifolia*; 12. *scariosa*; 13. *spicata*; 14. *squarrosa*; and, 15. *tinctoria*. Of these three are British: viz. 1. *S. alpina*, mountain saw-wort. The root and stem are woody; the latter being from one to two feet high. The leaves are numerous, triangular, long pointed, substantial, dark green above, white beneath, and serrated, with round intervals between the teeth, on foot-stalks. The flowers are purple. The scales of the calyx are very short and downy. It grows on high mountains, and flowers commonly in July or August. 2. *S. arvensis*, corn saw-wort, or way thistle. The stem is generally erect, branched, and two or three feet high. The leaves are sinuated, ser-

rated and spinous; those above being almost entire. The flowers are of a pale purple; the down is very long. This plant grows in cultivated grounds and by way sides, and flowers in July or August. When burned it yields good ashes for making glass or fixed alkali. 3. S. tinctoria is distinguished by a stem erect and slender, branched at the top, and three feet high. The leaves are smooth, pinnatifid, and serrated: the flowers are purple, and in umbels, and terminal. The down of the seed is glossy, with a brown or gold tinge. It grows in woods and wet pastures. It dyes cloth of an exceedingly fine yellow color, which stands well when fixed with alum. Goats eat this plant; horses are not fond of it; cattle, swine, and sheep, leave it untouched.

SERRATUS, in anatomy, a name given to several muscles, from their resemblance to a saw. See ANATOMY.

SERRES (John Thomas), a French artist of considerable merit and reputation in sea pieces. He was descended of a noble family, long resident at Beauperre, near Oche, whence his father, count Dominic de Serres, nephew of the then archbishop of Rheims, eloped, in order to avoid an ecclesiastical life. Entering the Spanish service, he was taken prisoner by the English, received his liberty on parole, and, though afterwards this restriction was removed, he continued to reside in this country, and to exercise his talents as a draughtsman, which at length procured him the honor of a seat among the fellows of the Royal Academy. His eldest son, the subject of this article, inherited his father's genius, and, besides the many proofs of his talents as a painter yet extant, was the author of a work entitled the Little Sea Torch, a Guide for Coasting Pilots, folio, 1801. Mr. Serres was husband to the solicitous princess Olive of Cumberland. He died December 28th, 1825.

SERRES (Oliver), a French agriculturalist, was born in 1539, at Villeneuve de Bery, near Viviers, and showed himself so able a manager of his own estate, that Henry IV. called him to Paris, and entrusted him with the management of the royal domains. He had the merit of introducing the white mulberry into France, and was the author of many valuable improvements. He died in 1619. The works of this respectable individual are, a Treatise on the Culture of Silk, 1599; Feconde Richesse du Meurier Blanc, 1603; Theatre d'Agriculture et Menage des Champs; which last work has been repeatedly printed, and is much esteemed.

SERT, a town of Kurdistan, Asiatic Turkey, the ancient Tigranocerta, the capital of Tigranes, who peopled it chiefly by the prisoners seized during his invasion of Syria and Cappadocia, A. C. 69. It was taken and plundered by Lucullus, but retained its importance till after the Saracen invasion. It is now only a large village, containing about 3000 inhabitants, Mahometans and Armenian Christians, who have three small mosques, a college, and Armenian church. It is surrounded on every side by high mountains, and washed by the Kabour. The surrounding territory is in an improved state of culture: and the chief of this place is a powerful

feudal lord. Seventy-five miles south-east of Diarbekir.

SERTIO (Sebastian), a celebrated architect and writer, born at Bologna, in the sixteenth century. On the invitation of Francis II. he embellished his palace at Fontainbleau. He wrote a Treatise on Architecture, which does honor to his judgment and taste.

SERTORIUS (Quintus), a celebrated Roman general, born at Nursia. He accompanied Marius into Gaul, and fought bravely against the Teutones and Cimbri, but lost an eye in the first battle. He followed Marius and Cinna to Rome, but disapproved of the cruelties committed by these monsters. Being afterwards proscribed by the equally bloody Sylla, he fled into Spain, where he headed the other proscribed exiles, and acted with such valor and address that he became for a time sovereign of the country. See ROME and SPAIN. While Rome itself was subjected to repeated bloody massacres, and all law and justice seemed to be abolished, Sertorius erected a republic in Spain, and governed the people with so much justice, mildness, and humanity, that the Lusitanians almost adored him. But a villain named Perpenna, envious of his fame, conspired with one Antonius, and murdered him at a banquet, A. A. C. 73.

SERTULARIA, in zoology, a genus belonging to the class of vermes, and to the order of zoophyta. The stem is radicated, fibrous, naked, and jointed; the florets are hydræ, and there is one at each joint. This genus comprehends forty-two species of corallines.

SERVAL, the mountain cat. See FELIS.

SERVAN(St.), a town of the north department of the Ille and Vilaine, France, situated at the mouth of the Rance, about a mile to the south of St. Malo. It is tolerably built, has a fine port, divided into two parts by a rock, on which stands the tower of Solidor, and manufactures of linen, sail cloth, soap, and tobacco; ship-building is likewise carried on to some extent. One of the divisions of the port is fitted for men of war or large merchantmen; the other for smaller vessels. This place is the resort of a number of English families: and in time of war sends out numerous privateers.

SERVANDONI (John Nicholas), an eminent architect, born at Florence in 1695. He rendered himself famous by his exquisite taste in architecture, and by his genius for decorations, fetes, and buildings. He was employed and rewarded by most of the princes in Europe. He was honored in Portugal with the order of Christ. In France he was architect and painter to the king, and member of the different academies established for the advancement of these arts. He received the same titles from the kings of Britain, Spain, and Poland, and from the duke of Wirtemberg. With all these advantages, his want of economy was so great, that he left nothing behind him. He made decorations for the theatres of Paris, London, and Dresden. The French king's theatre, called la salle des Machines, was under his management. His shows and decorations were astonishly sublime; his Descent of Æneas into Hell in particular, and his Enchanted Forest. He built a theatre at Chambord for count Saxe; and fur-

nished the plan of the theatre royal at Dresden. His genius for fêtes was remarkable; he conducted a great number in Paris and London; and one at Lisbon for a victory gained by the duke of Cumberland. He presided at the magnificent fête given at Vienna on the marriage of the archduke Joseph and the infanta of Parma. He died at Paris in 1766.

**SERVANT**, *n. s. & v.a.* Fr. *servier*; Lat. *servire*, *v.a. & v.n.* servio. To attend; *SERVICE*, *n. s.* work for; obey; assist; promote; help; *SERVICEABLE*, *adj.* satisfy; stand instead of any thing to another; treat; dis-  
*SERVICEABleness*, *n.s.* charge, as an office; and (a Gallicism) to make use of, as in the phrase (*Fr. se servir de*) to serve himself of: as a verb neuter, to be in attendance; be a servant or slave; wait; be convenient; produce a desired end: suit; conduce; officiate: a servant is he who in any way serves, obeys, or attends; one in a state of subjection; one in menial employ: used by Shakspeare as a verb active for to subject: service, such employ, or any occupation or duty of a servant; military duty; purpose; use; useful office; course; order: the adverb and noun substantive corresponding: a serving-man is a menial servant: servitude, the state of a servant, particularly of a menial one.

And we distrien counsels and al highnesse that highteth itself aghens the science of God and dryuen into caftyte al understandyng into the seruyse of Crist. *Wiclyf.* 2 Cor. 10.

We will give thee this also for the service which thou shalt serve with me. *Genesis xx. 27.*

Thou hast made me to serve with thy sins; thou hast wearied me with thine iniquities.

*Isaiah xliii. 24.*

They that serve the city shall serve it out of all the tribes of Israel. *Ezek. xlvi. 19.*

Israel served for a wife, and for a wife he kept sheep. *Hosea.*

Martha was cumbered about much serving, and said, Lord, dost thou not care that my sister hath left me to serve alone? *Luke x. 40.*

The look bewrayed, that, as she used these ornaments not for herself, but to prevail with another, so she feared that all would not serve. *Sidney.*

He was sent to the king's court, with letters from that officer, containing his own serviceable diligence in discovering so great a personage; adding whilom more than was true of his conjectures. *Id.*

He might continually be in her presence, shewing more humble serviceableness and joy to content her than ever before. *Id.*

When he cometh to experience of service abroad, or is put to a piece or pike, he maketh a worthy soldier. *Spenser.*

They think herein we serve the time because thereby we either hold or seek preferment. *Hooker.*

Our speech to worldly superiors we frame in such sort as serveth best to inform and persuade the minds of them, who otherwise neither could nor would greatly regard our necessities. *Id.*

According to this form of theirs, it must stand for a rule, No sermon, no service. *Id.*

Religion hath force to qualify all sorts of men and to make them, in public affairs, the more serviceable; governors the apter to rule with conscience; inferiors, for conscience sake, the willinger to obey. *Id.*

Aristotle speaketh of men whom nature hath framed for the state of servitude, saying, They have reason so far forth as to conceive when others direct them. *Id.*

Many noble gentlemen came out of all parts of Italy, who had before been great commanders, but now served as private gentlemen without pay.

*Kinolles's History of the Turks.*

Bid them cover the table, serve in the meat,  
And we will come in to dinner.

*Id. Merchant of Venice.*

Both more or less have given him the revolt;  
And none serve with him but constrained things,  
Whose hearts are absent too. *Shakspeare. Macbeth.*

As occasion serves this noble queen  
And prince shall follow with a fresh supply.

*Id. Henry IV.*

Being unprepared,  
Our will became the servant to defect,  
Which else should free have wronged. *Id. Macheth..*

#### My affairs

Are servanted to others: though I owe  
My revenge properly, remission lies  
In Volscian breasts. *Id. Coriolanus.*

The banish'd Kent, who in disguise  
Follow'd his king, and did him service  
Improper for a slave. *Id. King Lear.*

To thee a woman's services are due,  
My fool usurps my body. *Id.*

I know thee well, a serviceable villain;  
As duteous to the vices of thy mistress  
As baseness could desire. *Id.*

Thou, Nature, art my goddess; to thy law  
My services are bound. *Id.*

Both fell by our servants, by those men we lov'd  
most: *Id.*

A most unnatural and faithless service. *Shakspeare.*

By oppressing and betraying me,  
Thou might'st have sooner got another service. *Id.*

That service is not service, so being done,  
But being so allowed. *Id. Cymbeline.*

I am a woman lacking wit  
To make a seemly answer to such persons  
Pray do my service to his majesty. *Id. Henry VIII.*

Your niece did more favours to the duke's serving-  
man, than ever she bestowed on me. *Id. Twelfth Night.*

You would have sold your king to slaughter,  
His princes and his peers to servitude,  
His subjects to oppression and contempt. *Id. Henry V.*

Soon after our dinner was served in, which was right good viands, both for bread and meat: we had also drink of three sorts, all wholesome and good. *Bacon.*

Riches gotten by service, though it be of the best rise, yet, when gotten by flattery, may be placed amongst the worst. *Id.*

Although they built castles, and made freeholders, yet were there no tenures and services reserved to the crown; but the lords drew all the respect and dependency of the common people unto themselves. *Davies's State of Ireland.*

At the parliament at Oxford, his youth, and want of experience in sea-service, had somewhat been shrewdly touchod, even before the sluices of popular liberty were yet set open. *Wotton's Buck.*

Just in the nick; the cook knock'd thrice,  
And all the waiters in a trice

His summons did obey;  
Each servant-man, with dish in hand,  
Marched boldly up, like our train'd band,  
Presented, and away. *Suckling*

*All the vessels of the king's house are not for uses of honour; some be common stuff, and for mean services, yet profitable.* *Spelman.*  
*I will serve myself of this concession.* *Chillingworth.*

*I know no necessity why private and single abilities should quite justle out and deprive the church of the joint abilities and concurrent gifts of many learned and godly men, such as the composers of the service book were.* *King Charles.*

*Cleopatra made Antony a supper sumptuous and royal; howbeit there was no extraordinary service seen on the board.* *Hukewill.*

A complete brave man must know solidly the main end he is in the world for: and withal how to *serve himself* of the divine's high contemplations, of the metaphysician's subtle speculations, and of the natural philosopher's minute observations.

*Dighy on the Soul.*

*They would serve themselves of this form.* *Taylor.*

Besmeared with the horrid juice of sepia, they danced a little in phantastick postures, retired awhile, and then returned, *serving up* a banquet as at solemn funerals. *Id.*

When a storm of a sad mischance beats upon our spirits, turn it into some advantage, by observing where it can serve another end, either of religion or prudence. *Id.*

When wealthy, shew thy wisdom not to be To wealth a servant, but make wealth serve thee. *Denham.*

A goddess among gods ador'd, and served By angels numberless, thy daily train. *Milton.*

Bodies bright and greater should not serve The less not bright. *Id.*

Matters hid leave to God, him serve and fear. *Id.*

Who lessens thee, against his purpose serves To manifest the more thy might. *Id.*

After him a cumb'rous train Of herds, and flocks, and numerous servitude. *Id.*

It is much more easy for men to serve their own ends of those principles, which they do not put into men, but find there. *Tillotson.*

God requires no man's service upon hard and unreasonable terms. *Id. Sermons.*

A court, properly a fair, the end of it trade and gain: for none would go to service that thinks he has enough to live well of himself. *Temple.*

Others, pampered in their shameless pride, Are served in plate, and in their chariots ride. *Dryden.*

If they elevate themselves, 'tis only to fall from a higher place, because they serve themselves of other men's wings, neither understanding their use nor virtue. *Id. Dufresnoy.*

Take it, she said: and, when your needs require, This little brand will serve to light your fire. *Dryden.*

Read that; 'tis with the royal signet signed, And given me by the king, when time should serve, To be perused by you. *Id. Spanish Fryar.*

This poem was the last piece of service I did for my master king Charles. *Dryden.*

Nothing would serve them but riding. *L'Estrange.*

The stork's plea, when taken in a net, was the service she did in picking up venomous creatures. *Id.*

If any subject, interest, or fancy has recommended, their reasoning is after their fashion; it serves their turn. *Locke.*

All action being for some end, its aptness to be commanded or forbidden must be founded upon its serviceableness or disserviceableness to some end. *Norris.*

Shall he thus serve his country, and the muse The tribute of her just applause refuse? *Tate.*

As the former empty plea served the sottish Jews, this equally serves these to put them into a fool's paradise, by feeding their hopes, without changing their lives. *South.*

Though it is necessary that some persons in the world should be in love with a splendid servitude, yet certainly they must be much beholding to their own fancy, that they can be pleased at it; for he that rises up early, and goes to bed late, only to receive addresses, is really as much abridged in his freedom, as he that waits to present one. *Id.*

The order of human society cannot be preserved, nor the services requisite to the support of it be supplied, without a distinction of stations, and a long subordination of offices. *Rogers.*

His own inclinations were to confine himself to his own business, and be serviceable to religion and learning. *Attbury.*

The same mess should be served up again for supper, and breakfast next morning. *Arbuthnot's History of John Bull.*

One half-pint bottle serves them both to dine, And is at once their vinegar and wine. *Pope.*

Gentle streams visit populous towns in their course, and are at once of ornament and service to them. *Id.*

Our victory only served to lead us on to further visionary prospects. *Swift.*

If stations of power and trust were constantly made the rewards of virtue, men of great abilities would endeavour to excel in the duties of a religious life, in order to qualify themselves for public service. *Id.*

The clergy prevent themselves from doing much service to religion, by affecting so much to converse with each other, and caring so little to mingle with the laity. *Id.*

A book to justify the revolution archbishop Tillotson recommended to the king, as the most serviceable treatise that could have been published then. *Id.*

With Dennis you did ne'er combine, Not you, to steal your master's wine;

Except a bottle, now and then, To welcome brother serving-men. *Id.*

That service may really be done, the medicine must be given in larger quantities. *Mead.*

The congregation was discomposed, and divine service broken off. *Watts.*

If my name, therefore, will serve them in any degree, as a pass-port into the public notice, they are welcome to it. *Cowper's Private Correspondence.*

SERVANT is a term of relation signifying a person who owes and pays obedience for a certain time to another in quality of a master. The law of England therefore abhors, and will not endure, the existence of slavery within this nation: so that when an attempt was made to introduce it by stat. 1 Edw. VI. c. 3, which ordained that all idle vagabonds should be made slaves, and fed upon bread, water, or small drink, and refuse meat; should wear a ring of iron round their necks, arms, or legs; and should be compelled, by beating, chaining, or otherwise, to perform the work assigned them, were it ever so vile; the spirit of the nation could not brook this condition, even in the most abandoned rogues; and therefore this statute was repealed two years afterwards. And now it is laid down that a slave or negro, the instant he lands in Britain, becomes a freeman; that is, the law will protect him in the enjoyment of his person and his pro-

perty. Hence, too, it follows, that the infamous and unchristian practice of withholding baptism from negro servants, lest they should thereby gain their liberty, is totally without foundation, as well as without excuse. The law of England acts upon general and extensive principles; it gives liberty and protection to a Jew, a Turk, or a Heathen, as well as to those who profess the true religion of Christ; and it will not dissolve a civil obligation between master and servant, on account of the alteration of faith in either of the parties; but the slave is entitled to the same protection in England before as after baptism; and, whatever service the Heathen negro owed of right to his American master, by general, not by local law, the same (whatever it be) is he bound to render when brought to England and made a Christian.

1. The first sort of servants, therefore, acknowledged by the laws of England, are menial servants; so called from being *intra mœnia*, i. e. between the walls, or domestics. The contract between them and their masters arises upon the hiring. If the hiring be general, without any particular time limited, the law construes it to be a hiring for a year; upon a principle of natural equity, that the servant shall serve, and the master maintain him, throughout all the revolutions of the respective seasons; as well when there is work to be done, as when there is not; but the contract may be made for any larger or smaller term. All single men between twelve years old and sixty, and married ones under thirty years of age, and all single women between twelve and forty, not having any visible livelihood, are compellable by two justices to go out to service in husbandry or certain specific trades, for the promotion of honest industry; and no master can put away his servant, or servant leave his master, after being so retained, either before or at the end of his term, without a quarter's warning; unless upon reasonable cause, to be allowed by a justice of the peace; but they may part by consent, or make a special bargain.
2. Another species of servants are called apprentices (from *apprendre*, to learn), and are usually bound for a term of years. See APPRENTICE and APPRENTICESHIP.
3. A third species of servants are laborers, who are only hired by the day, or the week, and do not live *intra mœnia*, as part of the family, concerning whom the statutes before cited have made many very good regulations:

  1. Directing that all persons who have no visible effects may be compelled to work;
  2. Defining how long they must continue at work in summer and in winter;
  3. Punishing such as leave or desert their work;
  4. Empowering the justices at sessions, or the sheriff of the county, to settle their wages;
  - and,
  5. Inflicting penalties on such as either give or exact more wages than are so settled.

There is yet a fourth species of servants, if they may be so called, being rather in a superior, a ministerial, capacity; such as stewards, factors, and bailiffs; whom, however, the law considers as servants *pro tempore*, with regard to such of their acts as affect their master's or employer's property. As to the manner in which this relation affects the master, the servant himself, or third parties, see MASTER.

SERVETUS (Michael), M. D., a learned Spanish physician, born at Villaneuva, in Arragon, in 1509. He studied the civil law at the university of Toulouse. The Reformation, which had awakened the most polished nations of Europe, directed the attention of thinking men to the errors of the Romish church, and to the study of the Scriptures. Servetus, from the love of novelty, or of truth, carried his enquiries far beyond the other reformers, and not only renounced the false opinions of the Roman Catholics, but went so far as to question the doctrine of the Trinity. Accordingly, after spending several years at Toulouse, he went into Germany to propagate his new opinions. At Basil he had some conferences with Oecolampadius. He went next to Strasburg to visit Bucer and Capito, two eminent reformers of that town. From Strasburg he went to Hagenau, where he printed a book, entitled *De Trinitatis Erroribus*, in 1531. In 1532 he published two other treatises on the same subject; in an advertisement to which he informs the reader that it was not his intention to retract any of his former sentiments, but only to state them in a more distinct and accurate manner. To these two publications he had the courage to put his name, not suspecting that, in an age when liberty of opinion was granted, the exercise of that liberty would be attended with danger. After publishing these books, he left Germany, probably finding his doctrines not so cordially received as he expected. He went first to Basil, and thence to Lyons, where he lived two or three years. He then removed to Paris, where he studied medicine under Sylvius, Fernelius, and other professors, and obtained the degrees of M. A. and M. D. His love of controversy involved him in a serious dispute with the physicians of Paris; and he wrote an apology, which was suppressed by an edict of the parliament. The misunderstanding which this dispute produced with his colleagues, and the chagrin which so unfavorable a termination occasioned, made him leave Paris in disgust. He settled two or three years in Lyons, and engaged with the Fréllons, eminent printers of that age, as a corrector of their press. At Lyons he met with Peter Palmier, the archbishop of Vienne, with whom he had been acquainted at Paris. That prelate, who was a great encourager of learned men, pressed him to accompany him to Vienne, offering him at the same time an apartment in his palace. Servetus accepted the offer, and might have lived a tranquil and happy life at Vienne, if he could have confined his attention to medicine and literature. But an eagerness to establish his opinions always possessed him. At this time Calvin was at the head of the reformed church at Geneva. With Servetus he had been acquainted at Paris, and had there opposed his opinions. For sixteen years Calvin kept up a correspondence with him, endeavouring to reclaim him from his errors. Servetus had read the works of Calvin, but did not think they merited the high eulogies bestowed on them, nor did they convince him of his errors. He continued, however, to consult him; and for this purpose sent from Lyons to Geneva three questions, which respected the divinity of Jesus

Christ, regeneration, and the necessity of baptism. To these Calvin returned a civil answer. Servetus treated the answer with contempt, and Calvin replied with warmth. From reasoning he had recourse to abusive language; and this produced a polemical hatred, the most implacable disposition in the world. Calvin, having obtained some of Servetus's papers, sent them to Vienne along with the private letters which he had received during their correspondence. The consequence was that Servetus was arrested; but, having escaped from prison, he resolved to retire to Naples, where he hoped to practise medicine with the same reputation which he had so long enjoyed at Vienne. He imprudently took his route through Geneva. Calvin informed the magistrates of his arrival; Servetus was apprehended, and appointed to stand trial for heresy and blasphemy. It was a law at Geneva that every accuser should surrender himself a prisoner, that, if the charge should be found false, the accuser should suffer the punishment in which he meant to involve the accused. Calvin, not choosing to go to prison himself, sent one of his domestics to present the impeachment against Servetus. The articles brought against him were collected from his writings with great care; an employment which took up three days. One of these articles was, 'that Servetus had denied that Judea was a beautiful, rich, and fertile country; and affirmed, on the authority of travellers, that it was poor, barren, and disagreeable.' He was also charged with 'corrupting the Latin Bible, which he was employed to correct at Lyons, by introducing impudent, trifling, whimsical, and impious notes of his own through every page.' But the main article, which was certainly fatal to him, was, 'that in the person of Mr. Calvin, minister of the word of God in the church of Geneva, he had defamed the doctrine that is preached, uttering all imaginable injurious blasphemous words against it.' Calvin visited Servetus in prison, and had frequent conferences with him; but finding that, in opposition to all the arguments he could employ, the prisoner remained inflexible in his opinions, he left him to his fate. Before sentence was passed, the magistrates of Geneva consulted the ministers of Bâle, of Berne, and Zurich; and, as another account informs us, the magistrates of the protestant cantons of Switzerland. And, to enable them to form a judgment of the criminality of Servetus, they transmitted the writings of Calvin, with his answers. The general opinion was that Servetus ought to be condemned to death for blasphemy. He was accordingly sentenced to be burnt alive on the 27th of October, 1553. As he continued alive in the midst of the flames more than two hours, it is said, finding his torment thus protracted, he exclaimed: 'Unhappy wretch that I am! Will the flames be insufficient to terminate my misery? What then! Will the 100 pieces of gold, and the rich collar which they took from me, not purchase wood enough to consume me more quickly?' Though the sentence of death was passed against Servetus by the magistrates of Geneva, with the approbation of a great number of the magistrates and ministers of Switzerland, yet it is the opinion of

most historians that this dreadful sentence was imposed at the instigation of Calvin. This act of severity for holding a speculative opinion, however erroneous and absurd, has left a stain on the character of this illustrious reformer, which will attend the name of Calvin as long as history shall preserve it from oblivion. See CALVIN. Servetus was a man of great acuteness and learning, and well versed in the arts and sciences. In his own profession his genius exerted itself with success. In his tract entitled *Christianismi Restitutio*, published in 1553, he remarks that the whole mass of blood passes through the lungs by the pulmonary artery and vein, in opposition to the opinion which was then universally entertained, that the blood passes through the partition which divides the two ventricles. This was an important step towards the discovery of the circulation of the blood. His works consist of controversial writings concerning the Trinity: an edition of Pagninus's Version of the Bible, with a preface and notes, published under the name of Michael Villanovus; an Apology to the Physicians of Paris; and a book entitled *Ratio Syruporum*. Mosheim wrote in Latin *A History of the Heresy and Misfortunes of Servetus*, which was published at Helmstadt. in 4to., in 1728; and is extremely interesting.

SERVIA, a considerable province of European Turkey, the Maësia Superior of the Romans. Its form is nearly oblong, its length being about 190 miles, its breadth 100, and its superficial extent 19,000 square miles. It is an inland province, bounded on the north by a part of the Hungarian frontier, but on all other sides by portions of the Turkish territory, viz. on the west by Bosnia, on the east by Bulgaria, and on the south by Albania. Population about 1,000,000.

Servia is uneven and even mountainous, and its surface contains a number of forests, and large uncultivated heaths. The mountains in the south extend in a regular chain, but throughout the chief part of the province they have little regular connexion. One of the highest is called Haloga, situated to the south-west of Belgrade. The rivers are on its frontiers, viz. the Save and Danube on the north: the Morawa on its eastern, the Drina on its western boundary, both flow to the northward until falling into the Danube, after receiving a number of inferior streams. The Danube, in this part of its course, is in many places bordered by lofty rocks, rising almost perpendicularly from the river, or appearing to hang suspended above it. The scenery is highly picturesque.

The climate of Servia, though temperate, is less mild than might be expected in 43° and 44° of N. lat., the winter being of considerable length, and spring not beginning till April. This is partly owing to the height of the ridge of the Argentaro or Glubotin mountains, extending along its southern boundary; partly to the number of forests, and the general neglect of cultivation. In the month of June the south-west winds bring on periodical rains, which are succeeded in July and August by great heat, although the nights are generally cool. September is often a rainy month; but, in October and November, the weather is in general pleasant. Its

*soil* is in general fertile, the cultivated tracts producing abundant crops; but a small proportion of the country is as yet under tillage. The common products are rice, wheat, barley, oats, hemp, flax, and tobacco; also vines and fruits. Cotton is raised in the valleys. Timber is every where abundant, and mines of iron and salt have been discovered in several parts; but are almost entirely neglected: the only articles of export being hemp, wool, flax, and tobacco; cattle and hogs. The manufactures of woollen, cotton, and hardware, are wholly for home consumption. Of large towns, Servia reckons only Belgrade, Semendria, and Nissa; the other places are mere villages, meanly built, and ill peopled. There are, however, spread over the country, many vestiges of antiquity.

The inhabitants of Servia are divided into Servians, Turks, and Jews; the last two found only in the towns. The Servians were originally a tribe of Selavonians from Galicia, in Poland; and are not confined to the territory strictly called Servia, but are spread over other parts of Europe, particularly over a considerable proportion of Hungary. The language has a great resemblance to the Russian. The Servians are not devoid of spirit; but their natural activity is little improved by culture, and debased by bigoted superstition.

On the decline of the empire, Servia shared the fate of the other frontier provinces, and was occupied by invaders, from a tribe of whom, called Serbis, or Serbi, it received its modern name. In the middle ages it formed a separate and independent kingdom, which yielded to the Turks about the year 1365. The Servians have often since experienced the hardships of a frontier province, and still often the unbounded tyranny of its pachas and other provincial governors. A sense of these injuries, and an implacable hatred to the Turks, led to an insurrection about the year 1801. It soon became general, and the Servians flocking round the standard of Czerni Georges, previously known only as the head of a band of robbers, honored him with the name of avenger of his country. This chieftain at first confined himself to the forests; in time his followers increased, and found themselves of sufficient strength to meet the enemy in the open country. In December, 1806, he besieged and took Belgrade, after an obstinate resistance, and in a great measure expelled the Turks from the country. The Turks brought from time to time fresh forces against him, which he resisted with various success until 1814, when he judged proper to withdraw into Russia; and by a convention, concluded between his country and the Porte in 1815, the Servians acknowledged the sovereignty of the sultan, but secured the free exercise of their religion, as well as various civil rights. Every father of a family pays a ducat of yearly tax to the Porte, and every other individual a piastre; no Servian can settle in Turkey, nor travel in that country but for commercial purposes. The Turkish division of it is into four sandjiccats, viz. Belgrade, Semendria, Novibazar, and Kratow.

SERVIA, or NEW SERVIA, a district of European Russia, in the government of Ekaterinoslav, between the Dnieper and the Bog. It takes its

name from a number of Servian hussars and Pandours, who emigrated hither in 1754. Being a frontier province, it has a military form: and the territory is divided into ten districts, each occupied by a regiment.

SERVICE, *n. s.* Lat. *sorbus*. A tree and fruit.

The flower of service consists of several leaves, which are placed orbicularly, and expand in form of a rose, whose flower-cup afterwards becomes a fruit shaped like a pear or medlar; to which must be added, pinnated leaves like that of the ash.

*Miller.*

October is drawn in garment of yellow and carnation; in his left hand a basket of services, medlars, and other fruits that ripen late.

*Peacham.*

SERVICE, in law, is a duty which a tenant, on account of his fee, owes to his lord. There are many divisions of services; as, 1. Into personal, where something is to be done by the tenant in person, as homage and fealty. 2. Real, such as wards, marriages, &c. 3. Accidental, including heriots, reliefs, and the like. 4. Entire, where, on the alienation of any part of the lands by a tenant, the services become multiplied. 5. Frank-service, which was performed by freemen, who were not obliged to perform any base service, but only to find a man and horse to attend the lord into the army or to court. 6. Knight's service, by which lands were anciently held of the king, on paying homage, service in war, &c.

SEKVIC, in domestic economy. As in every free and well regulated society there must be a great number of persons employed in service, both in agriculture and domestic affairs, in this country service is a contract into which the servant voluntarily enters; and the master's authority extends no farther than to the performance of that species of labor for which the agreement was made. Dr. Paley has some judicious remarks on this subject, in his Moral and Political Philosophy, p. 139.

SERVICE, CHORAL, in church history, denotes that part of religious worship which consists in chanting and singing. The advocates for the antiquity of singing, as a part of church music, urge the authority of St. Paul in its favor (Ephesians v. 19, and Colossians iii. 16), and assert that songs and hymns were from the establishment of the church sung in the assemblies of the faithful. It appears from undoubted testimony that singing, which was practised as a sacred rite among the Egyptians and Hebrews at a very early period, and which likewise constituted a considerable part of the religious ceremonies of the Greeks and Romans, made a part of the religious worship of Christians, not only before churches were built and their religion established by law, but from the first profession of Christianity. However, others have dated the introduction of music into the service of the church in that period during which Leontius governed the church of Antioch, i. e. between A. D. 347 and 356. See ANTIHONY. From Antioch the practice soon spread through the other churches of the east; and, in a few ages after its first introduction into the divine service, it not only received the sanction of public authority, but those were forbid to join in it who were ignorant of music, by a canon of the council of

Laodicea, about A. D. 372. Singing was introduced into the western churches by St. Ambrose about A. D. 374, who was the institutor of the Ambrosian chant established at Milan about 386; and Eusebius (lib. ii. cap. 17) tells us that a regular choir, and method of singing the service, were first established, and hymns used in the church at Antioch, during the reign of Constantine; and that St. Ambrose, who had long resided there, had his melodies thence. This was about 230 years afterwards amended by pope Gregory the Great, who established the Gregorian chant; a plain, unisonous, kind of melody. This still prevails in the Roman church; it is known in Italy by the name of *canto fermo*; and in Germany and most other countries by that of the *cantus Gregorianus*. All writers on this subject agree that St. Ambrose only used the four authentic modes, and that the four plagal were added by St. Gregory. Each of these had the same final, or key-note, as its relative authentic: from which there is no other difference, than that the melodies in the four authentic or principal modes are generally confined within the compass of the eight notes above the keynote, and those in the four plagal or relative modes, within the compass of the eight notes below the fifth of the key. See Mont. Ecclesiastical writers unanimously allow that pope Gregory, about 590, collected the musical fragments of such ancient psalms and hymns as the first fathers of the church had approved and recommended to the first Christians; and that he selected, methodised, and arranged them in the order which was long continued at Rome, and soon adopted by the chief part of the western church. From the time of Gregory to that of Guido there was no other distinction of keys than that of authentic and plagal; nor were any semitones used but those from E to F, B to C, and occasionally A to B ♯. With respect to the music of the primitive church, though it consisted in the singing of psalms and hymns, yet it was performed in many different ways; sometimes the psalms were sung by one person alone, whilst the rest attended in silence; sometimes they were sung by the whole assembly; sometimes alternately, the congregation being divided into separate choirs; and sometimes by one person, who repeated the first part of the verse, the rest joining in the close of it. Of these four methods of singing, the second and third were named *symphony* and *antiphony*; and the latter was sometimes called *responsaria*, in which women were allowed to join. St. Ignatius is said to have been the first who suggested to the primitive Christians in the east the method of singing hymns and psalms alternately, or in dialogue; and the custom soon prevailed in every place where Christianity was established; though Theodore in his history (lib. ii. cap. 24), tells us that this manner of singing was first practised at Antioch. It is the opinion of the learned Martini that the music of the first five or six ages of the church consisted chiefly in a simple chant of unisons and octaves, of which many fragments are still remaining in the *canto fermo* of the Romish missals. For, with respect to music in parts, it does not appear in these early ages that

either the Greeks or Romans were in possession of harmony or counterpoint, which has been generally ascribed to Guido, a monk of Arezzo in Tuscany, about 1022. See ARETIN. The choral music, which had its rise in the church of Antioch, and thence spread through Greece, Italy, France, Spain, and Germany, was brought into Britain by the singers who accompanied Austin the monk, when he came over, in 596, with a commission to convert the inhabitants of this country to Christianity. Bede tells us that when Austin and the companions of his mission had their first audience of king Ethelbert, in the Isle of Thanet, they approached him in procession, singing litanies, and that some time afterwards, when they entered Canterbury, they sung a litany, and at the end of it, Hallelujah. But, though this was the first time the Anglo-Saxons had heard the Gregorian chant, yet Bede tells us that our British ancestors had been instructed in the rites and ceremonies of the Gallican church by St. Germanus, and heard him sing Hallelujah many years before the arrival of St. Austin. In 680 John, praecitor of St. Peter's in Rome, was sent over by pope Agatho to instruct the monks of Weremouth in the art of singing; and he was prevailed upon to open schools for teaching music in other places in Northumberland. Benedict Biscop, the preceptor of Bede, Adrian the monk, and many others contributed to disseminate the knowledge of the Roman chant. At length, the successors of St. Gregory and of Austin having established a school for ecclesiastical music at Canterbury, the rest of the island was furnished with masters from it. The choral service was first introduced in the cathedral church of Canterbury; and till the arrival of Theodore, and his settlement in that see, the practice of it seems to have been confined to the churches of Kent; but after that it spread over the whole kingdom. This mode of religious worship prevailed in all the European churches till the Reformation: the first deviation from it is that which followed the Reformation by Luther, who, being himself a lover of music, formed a liturgy, which was a musical service, in a work entitled *Psalmodia, h. c. Cantica sacra Veteris Ecclesiae selecta*, printed at Norimberg in 1533, and at Wittemberg in 1561. But Calvin, in his establishment of a church at Geneva, reduced the whole of divine service to prayer, preaching, and singing; the latter of which he restrained. He excluded the offices of the antiphon, hymn, and motet, of the Romish service, with that artificial and elaborate music to which they were sung; and adopted only that plain metrical psalmody, which is now in general use among the reformed churches, and in all the parish churches of Scotland. For this purpose he used Marot's version of the Psalms, and employed a musician to set them to easy tunes only of one part. In 1553 he divided the Psalms into small portions, and appointed them to be sung in churches. Soon after they were bound up with the Geneva catechism; from which time the Catholics were forbid the use of them, under a severe penalty. Soon after the Reformation in England, complaints were made by many of the dignified clergy and others of the intricacy and

difficulty of the church music of those times : in consequence of which it was once proposed that organs and curious singing should be removed from the English churches. Latimer, in his diocese of Worcester, went still farther, and issued injunctions to the prior and convent of St. Mary, forbidding in their service all manner of singing. In the reign of Edward VI. a commission was granted to eight bishops, eight divines, eight civilians, and eight common lawyers, to compile a body of ecclesiastical laws to be observed throughout the realm. The result was a work first published by Fox the martyrologist, in 1571, and afterwards in 1640, under the title of *Reformatio Legum Ecclesiasticarum*. These thirty-two commissioners, instead of reprobating church music, merely condemned figurative and operose music, or that kind of singing which abounded with fugues, responsive passages, and a commixture of various and intricate proportions ; which is by musicians termed *descant*. However, notwithstanding the objections against choral music, the compilers of the English liturgy in 1548, and the king himself, determined to retain musical service. Accordingly, the stat. 2 and 3, Edward VI. c. 1, clearly recognises the practice of singing ; and in 1550 a formula was composed, which continues with little variation, to be the rule for choral service at this day. The author of this work was John Marbecke, or Marbeke : and it was printed by Richard Grafton, in 1550, under the title of the Book of Common Prayer, noted. Queen Mary labored to re-establish the Roman choral service ; but the accession of Elizabeth was followed by the act of uniformity ; in consequence of which, and of the queen's injunctions, the Book of Common Prayer, noted by Marbecke, was considered as the general formula of choral service. In 1560 another musical service, with some additions and improvements, was printed by John Day ; and in 1565 another collection of offices, with musical notes. Many objections were urged by Cartwright and other Puritans, against the form and manner of cathedral service, to which Hooker replied in his Ecclesiastical Polity. In 1654 the statutes of Edward VI. and Elizabeth for uniformity in the Common Prayer were repealed ; and the Directory for Public Worship, which allows only of the singing of psalms, established. But upon the restoration of Charles II. choral service was revived, and has since uniformly continued. See Hawkins's History of Music, vol. i. p. 404, vol. ii. p. 264, vol. iii. p. 58—468, &c., vol. iv. p. 44—347.

SERVILE, *adj.* Fr. *servil* ; Lat. *servi-*  
SER'VILELY, *adv.* *lis.* Slavish ; depend-  
SER'VILENESS, *n. s.* *ent* ; mean : the adverb  
SER'VILITY. and noun - substantive  
corresponding.

The most *servile* flattery is lodged the most easily in the grossest capacity ; for their ordinary conceit draweth a yielding to their greater, and then have they not wit to discern the right degrees of duty.

*Sidney.*

Fight and die, is death destroying death ;  
Where fearing dying, pays death *servile* breath.

*Shakspeare.*

To be queen in bondage is more vile  
Than is a slave in base *servility* ;  
For princes should be free. *Id. Henry VI.*

From imposition of strict laws to free  
Acceptance of large grace, from *servile* fear  
To filial. *Milton.*

To each changing news they changed affections  
bring,  
And *servilely* from fate expect a king.

*Dryden's Aurengzebe.*

What, besides this unhappy *servility* to custom,  
can possibly reconcile men, that own christianity, to  
a practice widely distant from it ?

*Government of the Tongue.*

Even fortune rules no more a *servile* land,  
Where exil'd tyrants still by turns command.

*Pope.*

He affects a singularity in his actions and thoughts,  
rather than *servilely* to copy from the wisest. *Swift.*

She must bend the *servile* knee,  
And fawning take the splendid robber's boon.

*Thomson.*

The angels and daemons, those by their subserviency, and these by the *servility* of their obedience, manifestly declared Christ and his apostles to be vested with an authority derived from their Lord.

*West.*

SERVILIA, a sister of the celebrated Cato of Utica, who was deeply enamoured of Julius Caesar, though her brother was one of his most inveterate enemies. One day she sent Caesar a letter full of the most tender expressions of affection. This epistle was delivered to Caesar in the senate-house, while the senate were debating about the punishing of Catiline's associates. Cato, supposing that the letter was from one of the conspirators, insisted on its being publicly read. Upon this Caesar gave it to Cato, who, having read it, returned it, saying, ‘Take it, Drunkard !’ From his connexion with Servilia, Caesar is generally believed to have been the father of the famous patriot, Marcus Brutus, whose parricidal hand, in spite of numberless favors bestowed on him by Caesar, was joined with those of the other conspirators in Caesar's murder. This seems to be confirmed by Caesar's dying words : ‘Et tu, mi fili, Brute !’ See ROME.

SERVILIUS (Ahal), a celebrated Roman, whom the dictator Cincinnatus appointed his master of horse, and who slew Mælius for refusing to obey the dictator's summons. For this he was banished, but was soon recalled, and was afterwards raised to the dictatorship.

SERVILIUS (Nonianus), a Latin historian, who flourished under Nero, and wrote a History of Rome, which is lost.

SERVITES, a religious order in the church of Rome, founded about 1233, by seven Florentine merchants, who, with the approbation of the bishop of Florence, renounced the world, and lived together in a religious community on Mount Senar, two leagues from that city.

SERVITOR, *n. s.* Fr. *serviteur*. Servant ; attendant. Obsolete.

This workman, whose *servitor* nature is, being only one, the heathens imagining to be more, gave him in the sky the name of Jupiter ; in the air of Juno ; in the water of Neptune ; in the earth of Vesta and Ceres.

*Hooker.*

Thus are poor *servitors*,  
When others sleep upon their quiet beds,  
Constrained to watch in darkness, rain, and cold.  
*Shakspeare.*

My noble queen, let former grudges pass,  
And henceforth I am thy true *servitor*.

*Id. Henry VI.*

Our Norman conqueror gave away to his *servitors* the lands and possessions of such as did oppose his invasion.  
*Davies.*

His learning is much of a size with his birth and education; no more of either than what a poor hungry *servitor* can be expected to bring with him from his college.  
*Swift.*

SERVITOR, in the university of Oxford, a student who attends on another for his maintenance and learning. See SIZAR.

SERVITUDE, the condition of a servant, or rather slave. On the declension of the Roman empire, a new kind of servitude was introduced, different from that of the ancient Romans; it consisted in leaving the lands of subjugated nations to the first owners, upon condition of certain rents, and servile offices, to be paid in acknowledgment. Hence the names of servi censiti, ascriptitii, and addicti glebae; some whereof were taxable at the reasonable discretion of the lord; others at a certain rate agreed on; and others were maimmorable, who, having no legitimate children, could not make a will to above the value of 5*d.*, the lord being heir to all the rest; and others were prohibited marrying, or going to live out of the lordship. Most of these servitudes existed in France till the Revolution; but they were long ago abolished in England. Such, however, was the original of our tenures, &c. See SLAVE.

SERVIUS GALBA. See GALBA and ROME.

SERVIUS MAURUS HONORATUS, a celebrated grammarian and critic of antiquity, who flourished about the time of Arcadius and Honorius; now chiefly known by his Commentaries on Virgil. There is also extant his work upon the feet of verses and the quantity of syllables, called Centimetrum.

SERVIUS TULLIUS, the sixth and best king of Rome. See ROME.

SERUM, *n.s.* Lat. *serum*. The thin and watery part that separates from the rest in any liquor: particularly the part of the blood which in coagulation separates from the grume.

Blood is the most universal juice in an animal body: the red part of it differs from the serum, the serum from the lymph, the lymph from the nervous juice, and that from the several other humours separated in the glands.  
*Arbuthnot.*

SERUM is a thin, transparent, saltish liquor, which makes a considerable part of the mass of blood. See ANATOMY and BLOOD.

The chemical properties and phenomena of serum are thus enumerated by Dr. Thomson, in his System of Chemistry:—“The serum is of a light greenish yellow color; it has the taste, smell, and feel of the blood, but its consistence is not so great. Its mean specific gravity is about 1.0287. It converts syrup of violets to a green, and therefore contains an alkali. On examination, Rouelle found that it owes this property to a portion of soda. When heated to the temperature of 156°, the serum coagulates, as Har-

vey first discovered. It coagulates also when boiling water is mixed with it; but, if serum be mixed with six parts of cold water, it does not coagulate by heat. When thus coagulated, it has a greyish white color, and is not unlike the boiled white of an egg. If the coagulum be cut into small pieces, a muddy fluid may be squeezed from it, which has been termed the serosity. After the separation of this fluid, if the residuum be carefully washed in boiling water and examined, it will be found to possess all the properties of albumen. The serum therefore contains a considerable proportion of albumen. Hence its coagulation by heat, and the other phenomena, which albumen usually exhibits. If serum be diluted with six times its quantity of water, and then boiled to coagulate the albumen, the liquid which remains after the separation of the coagulum, if it be gently evaporated till it becomes concentrated, and then be allowed to cool, assumes the form of a jelly, as was first observed by D. Haen. Consequently it contains gelatine. If the coagulated serum be heated in a silver vessel, the surface of the silver becomes black, being converted into a sulphuret. Hence it is evident that it contains sulphur; and Proust has ascertained that it is combined with ammonia, in the state of hydrosulphuret. If serum be mixed with twice its weight of water, and after coagulation by heat, the albumen be separated by filtration, and the liquid be slowly evaporated till it is considerably concentrated, a number of crystals are deposited, when the liquid is left standing in a cool place. These crystals, first examined by Rouelle, consist of carbonate of soda, muriate of soda, phosphate of soda, and phosphate of lime. The soda exists in the blood in a caustic state, and seems to be combined with the gelatine and albumen. The carbonic acid combines with it during evaporation. Thus it appears that the serum of the blood contains albumen, gelatine, hydrosulphuret of ammonia, soda, muriate of soda, phosphate of soda, and phosphate of lime. These component parts account for the coagulation occasioned in the serum by acids and alcohol, and the precipitation produced by tin, acetite of lead, and other metallic salts.”

SESAMOIDEA OSSA, certain small bones somewhat resembling the seeds of sesamum, whence their name. They are placed at the under part of the bones of the last joints of the fingers and toes.

SESAMUM, oily grain, in botany, a genus of plants belonging to the class of didynamia, and to the order of angiospermia; natural order twentieth, liridae: cal. divided into five parts: cor. campanulated, the tube of which is nearly the length of the calyx: the throat is inflated, and very large; the border is divided into five parts, four of which are spreading and nearly equal; the fifth is the lowest and largest. There are four filaments, and the rudiments of a fifth. The stigma is lanceolated: caps. has four cells. There are only two species, viz:—1. S. Indicum, with trifid lower leaves, grows naturally in India: this is an annual plant; the stalk rises taller than that of the orientale; the lower leaves are cut into three parts which is the only difference

between them. 2. *S. orientale*, has ovate, oblong, entire leaves. It is an annual, and grows naturally on the coast of Malabar, and in the island of Ceylon; rising with an herbaceous four cornered stalk, two feet high, sending out a few short side branches; the leaves are oblong, oval, a little hairy, and stand opposite. The flowers terminate the stalks in loose spikes; they are small, of a dirty white color, shaped somewhat like those of the fox-glove. After the flowers are past, the germen turns to an oval acute-pointed capsule with four cells, filled with oval compressed seeds, which ripen in autumn. It is often cultivated in all the eastern countries, and also in Africa, as a pulse; and of late years the seeds have been introduced into Carolina by the African negroes, where they succeed extremely well. The inhabitants of that country make an oil from the seed, which will keep good many years, without having any rancid smell or taste, but in two years become quite mild; so that when the warm taste of the seed, which is in the oil when first drawn, is worn off, they use it as a salad oil, and for all the purposes of sweet oil. The seeds of this plant are also used by the negroes for food; which seeds they parch over the fire, and then mix them with water, and stew other ingredients with them, which makes an hearty food. Sometimes a sort of pudding is made of these seeds, in the same manner as with millet or rice, and is by some persons esteemed, but is rarely used for these purposes in Europe. This is called benny or bonny in Carolina. In England these plants are preserved in botanic gardens as curiosities. Their seeds must be sown in the spring upon a hot-bed; and, when the plants are come up, they must be transplanted into a fresh hot-bed to bring them forward. After they have acquired a tolerable degree of strength, they should be planted into pots, and plunged into another hot-bed, managing them as has been directed for amaranths; for, if these plants are not thus brought forward in the former part of the summer, they will not produce good seeds in this country. From 9 lbs. of this seed which came from Carolina, there were upwards of two quarts of oil drawn, which is as great a quantity as has been obtained from any vegetable whatever. This might occasion its being called the oily grain.

*SESELI*, meadow saxifrage, or hartwort of Marseilles, in botany, a genus of plants belonging to the class of pentandria, and to the order of digynia; natural order forty-fifth, umbellatae. The umbels are globular; the involucrum consists of one or two leaflets; the fruit is egg-shaped and streaked. There are eleven species, viz.:—*S. ammoides*; 2. *Annum*; 3. *Elatum*; 4. *Glaucum*; 5. *Hyppomarathrum*; 6. *Montanum*; 7. *Pimpinelloides*; 8. *Pyrenaum*; 9. *Saxifragum*; 10. *Tortuosum*; and, 11. *Turbithum*. Of these, 1. *S. ammoides* grows in the south of Europe; 2. *S. glaucum* is a native of France; 3. *S. hyppomarathrum*, of Austria; 4. *S. montanum*, of France and Italy; 5. *S. tortuosum*, of the south of Europe.

*SESSIA*, *SEZIA*, or *SESSIA*, a river of the French empire, which rises in the Alps, on the borders of the ci-devant province of Valais, runs through

part of the late Piedmontese, waters the ci-devant lordship of Vercelli, and gives it its present name; and falls into the Po, a little below Casal.

*SESTIA*, or *SEZIA*, a department of the French empire, one of the six into which the ci-devant principalities of Piedmont, Montferrat, &c., were divided on the 11th of September 1802. It comprehends the late lordship of Vercelli, and some adjacent districts. Vercelli is the capital.

*SESOSTRIS*, king of Egypt. See *Egypt*, *Ethiopia*, and *SHISHAK*. Besides being a great conqueror, some say he taught the Egyptians astronomy. See *ASTRONOMY*.

*SESQUI*, a Latin particle, signifying a whole and a half; which, joined with altera, terza, quarta, &c., is much used in the Italian music to express a kind of ratios, particularly several species of triples.

*SESQUIALTER*, adj. { Fr. *sesquialtere*;

*SE-QUAL'TERAL*. { Lat. *sesquialter*. In geometry, a ratio where one quantity or number contains another once and a half as much more, as 6 and 9.

As the six primary planets revolve about the sun, so the secondary ones are moved about them, in the same *sesquialteral* proportion of their periodical motions to their orbs. Bentley.

In all the revolutions of the planets about the sun, and of the secondary planets about the primary ones, the periodical times are in a *sesquialter* proportion to the mean distance. Cheyne.

*SESQUIALTERAL*, or *SESQUIALTERATE*, in geometry and arithmetic: e. g. 6 and 9 are in a sesqui-alterate-ratio; since 9 contains 6 once, and 3, which is half of 6, over; and 20 and 30 are in the same; as 30 contain 20, and half 20 or 10.

*SFSQUI-DUPLICATE* ratio is when of two terms the greater contains the less twice, and half the less remains; as 15 and 6; 50 and 20.

*SESQUIP'EDAL*, adj. { Lat. *sesquipedalis*.

*SESQUIPEA'LIAN*. { Containing a foot and a half.

As for my own part, I am but a *sesquipedalian*, having only six foot and a half of stature.

Addison's *Guardian*.

Hast thou ever measured the gigantic Ethiopian, whose stature is above eight cubits high, or the *sesquipedalian* pigmy? Arbuthnot and Pope.

*SESQUIP'LICATE*, adj. From *sesqui* and *plicatus*. In mathematics. The proportion one quantity or number has to another, in the ratio of one half.

The periodical times of the planets are in *sesquiplicate* proportion, and not a duplicate proportion of the distances from the center of the radii; and consequently the planets cannot be carried about by an harmonically circulating fluid.

Cheyne's *Philosophical Principles*.

*SESS*, n. s. For assess, cess, or cense. Rate; cess charged; tax.

His army was so ill paid and governed, as the English suffered more damage by the *sess* of his soldiers, than they gained profit or security by abating the pride of their enemies.

Davies's *History of Ireland*.

*SESSION*, n. s. Fr. *session*; Lat. *sessio*. The act of sitting; emphatically, a public or official sitting of magistrates, or public officers: hence,

the time during which such an assembly continues to sit.

He hath as man, not as God only, a supreme dominion over quick and dead ; for so much his ascension into heaven, and his session at the right hand of God, do import. *Hooker.*

They are ready to appear

Where you shall hold your session. *Shakspeare, King Lear.*

Summon a session, that we may arraign  
Our most disloyal lady. *Shakspeare.*

The old man, mindful still of moan,  
Weeping, thus bespeak the session. *Chapman's Odyssey.*

\* Many, though they concede a table-gesture, will hardly allow this usual way of session. *Browne's Vulgar Errors.*

It was contrary to the course of parliament that any bill that had been rejected should be again preferred the same session. *Clarendon.*

Of this session ended they bid cry  
The great result. *Milton.*

The second Nicene council affords us plentiful assistance in the first session, wherein the pope's vicar declares that Meletius was ordained by Arian bishops, and yet his ordination was never questioned. *Stillingfleet.*

Many decrees are enacted, which at the next session are repealed. *Norris.*

Called to council all the Achaian states,  
Nor herald sworn the session to proclaim. *Pope's Odyssey.*

**SESSION, KIRK,** the lowest ecclesiastical court in Scotland. See **KIRK SESSION.** A kirk-session, when regularly constituted, must always consist of the minister, elder, session-clerk, and kirk-treasurer. None of these ever receive any salary except the session-clerk, who is usually the schoolmaster of the parish, and has a small salary allowed for minuting the transactions. The kirk-treasurer is for the most part one of the elders ; and he is an important member of this court. Without his intervention no distribution of the poor's funds is deemed legal ; nor can any payments be made, receipts granted, or money transferred, but by him ; the minister and session being personally liable to make good all money that may otherwise be given away, should it ever afterwards be challenged by any heritor in the parish.

**SESSION OF PARLIAMENT,** the time from its meeting to its prorogation. See **PARLIAMENT.**

**SESSIONS** for weights and measures. In London, four justices from among the mayor, recorder, and aldermen (of whom the mayor or recorder is to be one), may hold a session to enquire into the offences of selling by false weights and measures, contrary to the statutes ; and to receive indictments, punish offenders, &c. **Charles I.**

**SESSIONS, QUARTER, OR COURT OF QUARTER SESSIONS,** an English court that must be held in every county once in every quarter of a year : which, by stat. 2 Hen. V. c. 4, is appointed to be in the first week after Michaelmas day, the first week after the epiphany, the first week after the close of Easter, and in the week after the translation of St. Thomas the martyr, or the 7th of July. It is held before two or more justices of the peace, one of which must be of the quorum. The jurisdiction of this court, by 34 Edw.

III. c. 1, extends to the trying and determining all felonies and trespasses whatsoever : though they seldom, if ever, try any greater offence than small felonies within the benefit of clergy ; their commission providing, that if any case of difficulty arises, they shall not proceed to judgment, but in the presence of one of the justices of the courts of king's bench or common pleas, or one of the judges of assize : and therefore murders, and other capital felonies, are usually remitted for a more solemn trial to the assizes. Neither can they try any new-created offence, without express power given them by the statute which creates it. But there are many offences and particular matters which, by particular statutes, belong properly to this jurisdiction, and ought to be prosecuted in this court ; as, the smaller misdemeanors against the public, not amounting to felony ; and especially offences relating to the game, highways, ale-houses, bastard children, the settlement and provision for the poor, vagrants, servants' wages, and Popish recusants. Some of these are proceeded upon by indictment ; others in a summary way, by motion, and order thereupon ; which order may for the most part, unless guarded against by particular statutes, be removed into the court of king's bench by writ of certiorari facias, and be there either quashed or confirmed. The records or rolls of the sessions are committed to the custody of a special officer, styled *custos rotulorum*, who is always a justice of the quorum ; and among them of the quorum (saith Lambard) a man for the most part especially picked out, either for wisdom, countenance, or credit. The nomination of the *custos rotulorum* (who is the principal officer in the county, as the lord-lieutenant is chief in military command) is by the king's sign-manual ; and to him the nomination of the clerk of the peace belongs ; which office is expressly forbidden to sell for money. In most corporate towns there are quarter sessions kept before justices of their own, within their respective limits ; which have exactly the same authority as the general quarter sessions of the county, except in a very few instances ; one of the most considerable of which is the matter of appeals from orders of removal of the poor, which, though they be from the orders of corporation justices, must be to the sessions of the county, by stat. 8 and 9 W. III. c. 30. In both corporations and counties at large there is sometimes kept a special or petty session, by a few justices, for despatching smaller business in the neighbourhood between the times of the general sessions ; as for licensing ale houses, passing the account of parish-officers, and the like.

**SESSITES,** in ancient geography, a river of Gallia Cisalpina, running into the Eridanus (Plin. iii. c. 16), now called Sesia.

**SESTERCE, n. s.** Fr. *sesterce* ; Lat. *sestercius*. Among the Romans, a sum of about £3 1s. 5*d.* sterling. See below.

Several of them would rather chuse a sum in *sesterces*, than in pounds sterling. *Addison on Medals.*

**SESTENCE, SESTERTIUS,** a silver coin, in use among the ancient Romans, called also simply *nummus*, and sometimes *nummus sestertius*. The *sestertius* was the fourth part of the dena-

rius, and originally contained two asses and a half. It was at first denoted by LLS; the two L's signifying two librae, and the S half. But the librarii, afterwards converting the two L's into an H, expressed the sestertius by HS. The word sestertius was first introduced by way of abbreviation for semistertius, which signifies two, and a half of a third, or, literally, only half a third; for, in expressing half a third, it was understood that there were two before. Some authors make two kinds of sesterces; the less called sestertius, in the masculine gender; and the great one, called sestertium, in the neuter: the first, that we have already described; the latter containing 1000 of the other. Others will have any such distinction of great and little sesterces unknown to the Romans: sestertius, say they, was an adjective, and signified as sestertius, or two asses and a half; and when used in the plural, as in quinquaginta sestertiūm, or sestertia, it was only by way of abbreviation, and there was always understood centena, millia, &c. This matter has been accurately stated by Mr. Raper, in the following manner:—The substantive to which sestertius referred is either as, or pondus; and sestertius as is two asses and a half; sestertium pondus, two pondera and a half, or 250 denarii. When the denarius passed for ten asses, the sestertius of two asses and a half was a quarter of it; and the Romans continued to keep their accounts in these sesterces long after the denarius passed for sixteen asses; till, growing rich, they found it more convenient to reckon by quarters of the denarius, which they called nummus, and used the words nummus and sestertius indifferently, as synonymous terms, and sometimes both together, as sestertius nummus; in which case the word sestertius, having lost its original signification, was used as a substantive; for sestertius nummus was not two nummi and a half, but a single nummus of four asses. They called any sum under 2000 sesterces so many sestertii, in the masculine gender; 2000 sesterces they called duo, or bina sestertia, in the neuter; so many quarters making 500 denarii, which was twice the sestertia; and they said dena, vicena, &c., sestertia, till the sum amounted to 1000 sestertia, which was 1,000,000 of sesterces. But, to avoid ambiguity, they did not use the neuter sestertium in the singular number, when the whole sum amounted to no more than 1000 sesterces, or one sestertium. They called 1,000,000 of sesterces decies nummūm, or decies sestertiūm, for decies-centena millia nummorūm, or sestertiōrum (in the masculine gender), omitting centena millia for the sake of brevity. They likewise called the same sum decies sestertiūm (in the neuter gender) for decies centies sestertiūm, omitting centies for the same reason; or simply decies, omitting centena millia sestertiūm, or centies sestertiūm; and with the numeral adverbs decies, vicies, centies, millies, and the like, either centena, millia, or centenies, was always understood. These were their most usual forms of expression; though for bina, dena, vicena, sestertia, they frequently said bina, dena, vicena millia nummūm. If the consular denarius contained sixty troy grains of fine silver, it was worth somewhat

more than eight pence farthing and a half sterling; and the as, of sixteen to the denarius, a little more than a half-penny. To reduce the ancient sesterces of two asses and a half, when the denarius passed for sixteen, to pounds sterling, multiply the given number by 5454, and cut off six figures on the right hand for decimals. To reduce nummi-sestertiū, or quarters of the denarius, to pounds sterling; if the given sum be consular money, multiply it by 8727, and cut off six figures on the right hand for decimals; but for imperial money diminish the same product by one-eighth of itself.—Philosophical Transactions, vol. Ixi. part ii. art. 48. To be qualified for a Roman knight an estate of 400,000 sesterces was required; and for a senator. of 800,000.

SESTERCE, or SESTERTIUS, was also used by the ancients for a thing containing two wholes and a half of another, as *as* was taken for any whole or integer.

SESTERCE, COPPER, was worth about one-tenth of a penny English.

SESVIUM, an ancient nation of Gallia Celtica. Cæs. de Bello Gall.

SESVIUM, in botany, a genus of the icosandria class and tryginia order of plants: *cal.* colored and divided into five parts; there are no petals: *caps.* egg-shaped, three celled, opening horizontally about the middle, and containing many seeds. There is only one species. *S. portulacastrum*, purslane-leaved sesvium, which is a native of the West Indies.

SET, *v. a. & v. n., part. adj. & n. s.* { Sax. *re-*  
*SETTER, n. s.* } *tan*; Goth.  
*SETTING-DOG.* } *seta*; Belg.  
*setten*; perhaps of Lat. *sedeo*. To place; put; fix; plant; adjust; regulate; value; adapt; set to music; variegate; intersperse with any thing; re-fix in a natural state; determine; predetermine; appoint; exhibit; display (taking *before*). This verb takes in composition almost all the prepositions after it; and the extracts below seem sufficient to illustrate their meaning: as a verb neuter to set means to be fixed; put one's self into a particular state, as of removal, commencement of a journey, &c.; applying one's self; plant: and in respect to the heavenly bodies, to fall below the horizon: hence to be extinguished or darkened, applied both to the eyes and in a general metaphorical sense: the verb neuter also takes after it various prepositions. See below. Set, as an adjective, means fixed; regular; according to rule: as a noun substantive, a fixed number or order of things; something planted, not sown; the apparent fall of a heavenly body below the horizon; a wager at dice; a game: a setter is applied generally, and particularly to a man who acts as a setting-dog at game, or as one taught to find game and point it out to the sportsman.

God set them in the firmament, to give light upon the earth. Gen. i. 17.

The sun was set. Id. xxviii. 11.

Every sabbath ye shall set it in order. Lev. xxiv. 8

Unto thy brother thou shalt not lend upon usury, that the Lord may bless thee in all that thou settest thine hand to. Deuteronomy.

Ahijah could not see ; for his eyes were set, by reason of his age. *1 Kings xiv. 4.*

Thou shalt pour out into all those vessels, and set aside that which is full. *2 Kings iv. 4.*

It pleased the king to send me, and I set him a time. *Neh. ii.*

Am I a sea, or a whale, that thou settest a watch over me ? *Job vii. 12.*

He setteth an end to darkness, and searcheth out all perfection. *Id. xxviii. 3.*

They that are younger than I have me in derision, whose fathers I would have disdained to have set with the dogs of my flock. *Id. xxx. 1.*

The proud have laid a snare for me, they have set gins. *Psalms.*

Because sentence against an evil work is not executed speedily, the heart of men is fully set in them to do evil. *Eccel.*

There is not a more wicked thing than a covetous man ; for such an one setteth his own soul to sale. *Eccles. x. 9.*

I will set mine eyes upon them for good, and bring them again to this land. *Jer. xxiv. 6.*

The fathers have eaten a sour grape, and the children's teeth are set on edge. *Id. xxxi. 29.*

I am come to set a man at variance against his father. *Matthew.*

He seemeth to be a setter forth of strange gods. *Acts xvii.*

Set your affections on things above, not on things on the earth. *Col. iii. 2.*

When he was gone I cast this book away : I could not look upon it but with weeping eyes, in remembering him who was the only setter on to do it. *Aschan.*

They thought the very disturbance of things established an hire sufficient to set them on work. *Hooker.*

We may still doubt whether the Lord, in such indifferent ceremonies as those whereof we dispute, did frame his people of set purpose unto an utter dissimilitude with Egyptians, or with any other nation. *Id.*

After it was framed, and ready to be set together, he was, with infinite labour and charge, carried by land with camels through that hot and sandy country. *Knottes.*

He wold not perform that service by the hazard of one set battle, but by dallying off the time. *Id.*  
Ere I could

Give him that parting kiss which I had set  
Betwixt two charming words, comes in my father. *Shakspeare.*

That man that sits within a monarch's heart,  
Would he abuse the countenance of the king,  
Alack, what mischiefs might he set abroad ! *Id.*

This present enterprise set off his head,  
I do not think a braver gentleman  
Is now alive. *Id. Henry IV.*

Can honour set to a leg ? no : or an arm ? no :  
honour hath no skill in surgery then ? no. *Shakspeare, Henry IV.*

Be you contented  
To have a son set your decrees at nought,  
To pluck down justice from your awful bench ? *Shakspeare.*

Who sets me else ? I'll throw at all. *Id. Richard II.*

Will you set your wit to a fool's ? *Shakspeare.*

That I might sing it, madam, to a tune,  
Give me a note : your ladyship can set,

—As little by such toys as may be possible. *Id.*

On Wednesday next, Harry, thou shalt set for-  
ward,

On Thursday we ourselves will march. *Id.*

If they set down before 's, 'fore they remove  
Bring up your army. *Id.*

Rude am I in my speech,  
And little blessed with the set phrase of peace. *Id. Othello.*

Shameless Warwick, peace !  
Proud setter up and puller down of kings ! *Id. Henry VI.*

The weary sun hath made a golden set ;  
And, by the bright track of his fiery car,  
Gives signal of a godly day to-morrow. *Id. Richard III.*

Have I not here the best cards for the game,  
To win this easy match play'd for a crown ?  
And shall I now give o'er the yielded set ? *Shakspeare.*

The shipping might be set on work by fishing, by transportation from port to port. *Bacon.*

Whatsoever fruit useth to be set upon a root or a slip, if it be sown will degenerate. *Id. Natural History.*

In studies, whatsoever a man commandeth upon himself, let him set hours for it ; but whatsoever is agreeable to his nature, let him take no care for any set times ; for his thoughts will fly to it of themselves so as the spaces of other business or studies will suffice. *Bacon.*

Through the variety of my reading, I set before me many examples both of ancient and latter times. *Id.*

Grief he tames that fetters it in verse ;  
But when I have done so,  
Some man, his art or voice to show,  
Doth set and sing my pain ;  
And, by delighting many, frees again  
Grief, which verse did restrain. *Donne.*

Heron the prompter falls to flat railing in the bitterest terms ; which the gentleman, with a set gesture and countenance, still soberly related ; until the ordinary, driven at last into a mad rage, was fain to give over. *Cureau.*

In court they determine the king's good by his desires, which is a kind of setting the sun by the dial. *Suckling.*

For using set and prescribed forms, there is no doubt but that wholesome words, being known, are aptest to excite judicious and fervent affections. *King Charles.*

Considering what an orderly life I had led, I only commanded that my arm and leg should be set, and my body anointed with oil. *Herbert.*

If he sets industriously and sincerely to perform the commands of Christ, he can have no ground of doubting but it shall prove successful to him. *Hammond.*

That this may be done with the more advantage, some hours must be set apart for this examination. *Duppa.*

When we are well, our hearts are set,  
Which way we care not, to be rich or great. *Denham.*

Though set form of prayer be an abomination, Set forms of petitions find great approbation. *Id.*

By his aid aspiring  
To set himself in glory above his peers. *Milton.*

As with stars, their bodies all,  
And wings, were set with eyes. *Id.*

Set not thy heart  
Thus overfond on that which is not thine. *Id.*  
His seed, when is not set, shall bruise my head. *Id.*

Reject not then, what offered means : who knows  
But God hath set before us to return thee,  
Home to thy country and his sacred house ? *Id.*

Whereas the setting of the pleiades and seven

stars is designed the term of autumn and the beginning of winter, unto some latitudes the stars do never set.

*Browne's Vulgar Errors.*

In gard'ning ne'er this rule forgot,  
To sow dry, and set wet. *Old Proverb.*

Equal success had set these champions high,  
And both resolved to conquer or to die. *Waller.*

Joy salutes me when I set

My blest eyes on Amoret. *Id.*

Solomon did not deliver his observations at random, but methodised them, and set them in order, that they might appear in more strength and lustre.

*Henry, Eccles. xii. 9.*

They that set light by their parents are in the highway to all wickedness. *Id. Ezek. xxii. 7.*

That fluid substance in a few minutes begins to set, as the tradesmen speak; that is, to exchange its fluidity for firmness. *Boyle.*

When I go a-hawking or setting, I think myself beholden to him that assures me, that in such a field there is a covey of partridges. *Id.*

Should we set our hearts only upon these things, and be able to taste no pleasure but what is sensual, we must be extremely miserable when we come unto the other world, because we should meet with nothing to entertain ourselves. *Tillotson.*

All that can be done is to set the thing before men, and to offer it to their choice. *Id.*

Therefore, setting aside all other considerations, I will endeavour to know the truth, and yield to that. *Id.*

Credit is gained by course of time, and seldom recovers a strain; but, if broken, is never well set again. *Temple.*

She sets the bar that causes all my pain; One gift refused, makes all their bounty vain. *Dryden.*

The fire was formed, she sets the kettle on. *Id.*

Set calf beumes to school, and let him be instructed there in rules of husbandry. *Id.*

Over-laboured with so long a course, 'Tis time to set at ease the smoking horse. *Id.*

Jove call'd in haste

The son of Maia, with severe decree,

To kill the keeper, and to set her free. *Id.*

Set thy own songs, and sing them to thy lute. *Id.*

High on their heads, with jewels richly set, Each lady wore a radiant coronet. *Id.*

He remembers only the name of Conon, and forgets the other, on set purpose, to shew his country squire was no greater scholar. *Id.*

Long has my soul desired this time and place, To set before your sight your glorious race. *Id.*

With what'er gall thou sett'st thyself to write, Thy inoffensive satires never bite. *Id.*

Cœnus has betray'd

The bitter truths that our loose court upbraid : Your friend was set upon you for a spy,

And on his witness you are doomed to die. *Id.*

Now the latter watch of wasting night, And setting stars, to kindly rest invite. *Dryden, Aeneid.*

My eyes no object meet

But distant skies that in the ocean set. *Id. Indian Emperor.*

The faithless pirate soon will set to sea, And bear the royal virgin far away. *Dryden.*

In ten set battles have we driven back These heathen Saxons, and regained our earth. *Id.*

That was but civil war, an equal set, Where piles with piles, and eagles eagles fight. *Id.*

Some are reclaimed by punishment, and some are set right by good nature. *L'Estrange.*

Our hearts are so much set upon the value of the benefits received, that we never think of the bestower. *Id.*

When the father looks sour on the child, every body else should put on the same coldness, till forgiveness asked, and a reformation of his fault has set him right again, and restored him to his former credit.

*Locke on Education.*

If the fear of absolute and irresistible power set it on upon the mind, the idea is likely to sink the deeper. *Locke.*

Our palates grow into a liking of the seasoning and cookery which by custom they are set to. *Id.*

No sooner is one action dispatched, which we are set upon, but another uneasiness is ready to set us on work. *Id.*

That law cannot keep men from taking more use than you set, the want of money being that alone which regulates its price, will appear, if we consider how hard it is to set a price upon unnecessary commodities; but how impossible it is to set a rate upon victuals in a time of famine. *Id.*

Set him such a task, to be done in such a time. *Id.*

He may learn to cut, polish, and set precious stones. *Id.*

'Tis raised by sets or berries, like white thorn, and lies the same time in the ground. *Mortimer's Husbandry.*

God bears a different respect to places set apart and consecrated to his worship to what he bears to places designed to common uses. *South.*

Set places and set hours are but parts of that worship we owe. *Id.*

Another set of men are the devil's setters, who continually beat their brains how to draw in some innocent unguarded heir into their hellish net, learning his humour, prying into his circumstances, and observing his weak side. *Id.*

I had one day set the hundredth psalm, and was singing the first line, in order to put the congregation into the tune. *Spectator*

Have I not set at nought my noble birth, A spotless fame, and an unblemished race, The peace of innocence, and pride of virtue ? My prodigality has given thee all. *Rowe's Jane Shore.*

Struck with the sight, inanimate she seems, Set are her eyes, and motionless her limbs. *Garth.*

The Julian eagles here their wings display, And there like setting stars the Decii lay. *Id.*

This river, When nature's self lay ready to expire, Quenched the dire flame that set the world on fire. *Addison.*

A couple of lovers agreed, at parting, to set aside one half hour in the day to think of each other. *Id.*

The town of Bern has handsome fountains planted, at set distances, from one end of the streets to the other. *Id.*

Minds altogether set on trade and profit often contract a certain narrowness of temper. *Id.*

I am much concerned when I see young gentlemen of fortune so wholly set upon pleasures, that they neglect all improvements in wisdom and knowledge *Id.*

As in the subordinations of government the king is offended by any insults to an inferior magistrate, so the sovereign ruler of the universe is affronted by a breach of allegiance to those whom he has set over us.

A spacious veil from his broad shoulders flew, That set the unhappy Phaëton to view : The flaming chariot and the steeds it shewed, And the whole fable in the mantle glowed. *Id.*

If we act by several broken views, and will not only be virtuous but wealthy, popular, and every thing that has a value set upon it by the world, we shall live and die in misery. *Id.*

'Tis not a *set* of features or complexion,  
The tincture of a skin, that I admire. *Id.*

W<sup>e</sup> obliges young heirs with a *settling* *dog* he has  
made himself. *Id.*

When his fortune *sets* before him all  
The pomps and pleasures that his soul can wish,  
His rigid virtue will accept of none. *Id. Cato.*

What sad disorders play begets!  
Desperate and mad, at length he *sets*  
Those darts, whose points make gods adore. *Prior.*

He rules the church's blest dominions,  
And *sets* men's faith by his opinions. *Id.*

Against experience he believes,  
He argues against demonstration;  
Pleased when his reason he deceives,  
And *sets* his judgment by his passion. *Id.*

Sensations and passions seem to depend upon a  
particular *set* of motions. *Collier.*

Should a man go about, with never so *set* study  
and design, to describe such a natural form of the  
year as that which is at present establish'd, he  
could scarcely ever do it in so few words that were  
so fit. *Woodward.*

The body is smooth on that end, and on this it is  
set with ridges round the point. *Id.*

All corpuscles of the same *set* or kind agree in  
every thing. *Id.*

What we hear in conversation has this general ad-  
vantage over *set* discourses, that in the latter we are  
apt to attend more to the beauty and elegance of the  
composure than to the matter delivered. *Rogers.*

Take *set* times of meditating on what is future.  
*Attbury.*

Before *set* of sun that day I hope to reach my win-  
ter quarters. *Id. to Pope.*

The fracture was of both the foci of the left leg :  
he had been in great pain from the time of the *setting*.  
*Wiseman.*

Their first movement and impressed motions de-  
mand the impulse of an almighty hand to *set* them a-  
go'. *Cheyn.*

They refer to those critics who are partial to some  
particular *set* of writers to the prejudice of others.  
*Pope.*

Though the same sun, with all-diffusive rays,  
Flush in the rose and in the diamond blaze,  
We prize the stronger effort of his power,  
And always *set* the gem above the flower. *Id.*

That the wheels were but small, may be guessed  
from a custom they have of taking them off, and *set-*  
*ting* them on. *Id.*

He must change his comrades ;  
In half the time he talks them round,  
There must another *set* be found. *Swift.*

He supplies his not appearing in the present scene  
of action, by *setting* his character *before* us, and con-  
tinually forcing his patience, prudence, and valour  
upon our observation. *Broome.*

Homer introduced that monstrous character to  
show the marvellous, and paint it in a new *set* of  
colors. *Id.*

Perhaps there is no man, nor *set* of men, upon  
earth, whose sentiments I entirely follow. *Watts.*

Be frequent in *setting* such causes at work whose  
effects you desire to know. *Id.*

SET, or SETS, a term used by the farmers and  
gardeners to express the young plants of the  
white thorn and other shrubs, with which they  
use to raise their quick or quick-set hedges.  
The white thorn is the best of all trees for this  
purpose; and, under proper regulations, its sets  
seldom fail of answering the farmer's utmost  
expectations.

SET OFF, in law, is an act whereby the de-

fendant acknowledges the justice of the plaintiff's  
demand on the one hand, but on the other sets  
up a demand of his own, to counterbalance that  
of the plaintiff, either in the whole or in part;  
as, if the plaintiff sues for £10 due on a note of  
hand, the defendant may set off £9 due to him-  
self for merchandise sold to the plaintiff; and,  
in case he pleads such set off, must pay the re-  
maining balance into court. This answers very  
nearly to the compensation or stoppage of the  
civil law, and depends upon the statutes 2 Geo.  
II. c. 22, and 8 Geo. II. c. 24.

SETABIS, an ancient town of Spain, between  
Carthage and Saguntum, near a river of the  
same name. *Sil. Ital.* 16, v. 474.

SETACEOUS, *adj.* Lat. *seta*. Bristly; set  
with strong hairs; consisting of strong hairs.

The parent insect, with its stiff *setaceous* tail, ter-  
ribilizes the rib of the leaf when tender, and makes  
way for its egg into the very pith. *Derham.*

SETACIOUS WORM, in natural history, a name  
given by Dr. Lister to that long and slender  
water worm which so much resembles a horse-  
hair, that it has been supposed by the vulgar to  
be an animated hair of that creature. These  
creatures, supposed to be living hairs, are a pecu-  
liar sort of insects, which are bred and nour-  
ished within the bodies of other insects, as  
worms of the ichneumon flies are in the bodies  
of the caterpillars. Aldrovand describes the crea-  
ture, and tells us it was unknown to the ancients;  
but called *sets aquatica*, and *vermis setarius*, by  
the moderns, either from its figure resembling  
that of a hair, or from a supposition of its once  
having been the hair of some animal. We ge-  
nerally suppose it, in the imaginary state of the  
hair, to have belonged to a horse; but the Ger-  
mans say it was once the hair of a calf, and call  
it by a name signifying *vitulus aquaticus*, the  
water calf. Albertus has declared that this ani-  
mal is generated of a hair; and adds that any  
hair, thrown into standing water, will in a very  
little time obtain life and motion. Other authors  
have dissented from this opinion, and supposed  
them generated of the fibrous roots of water  
plants; and others of the parts of grasshoppers  
fallen into the water. This last opinion is re-  
jected by Aldrovand as the most improbable of  
all. Standing and foul waters are most plenti-  
fully stored with them; but they are sometimes  
found in the clearest and purest springs, and  
sometimes out of the water, on the leaves of  
trees and plants, as on the fruit trees in our gar-  
dens, and the elms in hedges. They are from  
three to five inches long, of the thickness of a  
large hair; and are brown upon the back, and  
white under the belly, and the tail white on every  
part.

SE-TCHIOU, a city of China of the first  
rank, in the province of Koei-tehou, in a moun-  
tainous country, abounding with quicksilver and  
other minerals, 982 miles S. S. W. of Peking.

SE-TCHIN, or SE-CHING, a city of China of the  
first rank, in the province of Quang-si, 1100  
miles S. S. W. of Peking.

SE-TCHUEN, a mountainous province on  
the western frontier of China, bounded on the  
north by Ch'en-si, on the east and south by Hou-  
quang and Yunan, and on the west by Tibet.

This province is traversed from west to east by the great river Yang-tse-kiang, is highly fertile, and in a state of complete cultivation. It is particularly noted for its rhubarb, silk, sugar-cane, and orange and lemon trees. The mountains produce iron, tin, lead, loadstone, and lapis lazuli. It has a breed of small but handsome and swift horses, and abounds with the animal that produces musk. Among a variety of other birds is a species of hen, with wool like that of sheep. Salt is procured, by evaporation, from wells among the mountains. The province contains ten cities of the first rank, eighty-eight of the second and third, and a great number of fortified places. Sir George Staunton states the population at 27,000,000.

SETEEF, a town of Algiers, the ancient Sitipha, the capital of this part of Mauritania. The old city is now in a state of complete ruin, presenting scarcely one fragment of the Roman walls or arts: but the fountains, which flow plentifully near the centre of the city, are still delightful. Fifty miles south-west of Constantina.

SETFOIL, is a species of tormentilla.

SETHI, a son of Adam, to whom he seems from the text (Gen. v. 3) to have had a very striking resemblance, both in body and mind. By some Encyclopedists, and even by the learned Dr. Watkins, he is erroneously styled the third son of Adam. It is astonishing that learned authors should pay so little attention to facts. The supposition is totally incredible; for Adam was 130 years old when Seth was born; and it is extremely improbable, that, after the divine blessing, ‘increase and multiply,’ Eve should have remained barren for 126 years, the shortest period we can estimate from the birth of her second son Abel. Besides it is contrary to fact; for the first murderer in his reply to his divine judge, after his sentence, expresses his fears that ‘every one that findeth him should slay him’ (chap. iv. 14), which clearly proves that the world was become considerably populous before the birth of Seth. By Mr. Whiston’s calculation the descendants of Adam and Eve amounted at the birth of Seth to above 4000 persons. See ANTEDILUVIANS. From all that is said of the birth of Seth (Gen. iv. 25, and v. 3), we can only infer that Seth was the first son born by Eve after the murder of Abel. Had Seth been only the third son of Adam there would have been no occasion for setting a mark upon Cain, to prevent others from avenging Abel’s death. Seth was the second of the antediluvian patriarchs, and the father of Enos. Chronologists place his birth in the year B. C. 3874. He lived 912 years. Some say he was a great astronomer. See ASTRONOMY, Index.

SETHIANS, in church-history, Christian heretics; so called because they paid divine worship to Seth, whom they looked upon to be Jesus Christ, the Son of God, but who was made by a third divinity, and substituted in the room of the two families of Abel and Cain, which had been destroyed by the deluge. These heretics appeared in Egypt in the second century; and, as they were addicted to all sorts of lebauchery, they did not want followers; and continued in Egypt above 200 years.

SETHITES, the descendants of Seth. See Dr. Doig’s account of them under PHILOLOGY.

SETHON, an ancient king of Egypt, who was delivered from a formidable invasion by an immense multitude of rats. See EGYPT.

SETIA, an ancient town of Italy, in Latiuum, above the Pontine Marshes, famous for its wines, which Augustus preferred to all other.—Pliny xiv. c. 6.

SETINES, the modern name of Athens.

SETONS, in surgery, are said to be very useful in catarrhs, inflammations, and other disorders, particularly those of the eyes, as a gutta serena, cataract, and incipient sussfusion; to these we may add intense head-achs, with stupidity, drowsiness, epilepsies, and even the apoplexy itself.

SETTEE, in ship-building, a vessel very common in the Mediterranean with one deck and a very long and sharp prow. They carry some two masts, some three, without top-masts. They have generally two masts, equipped with triangular sails, commonly called lateen sails. The least of them are of sixty tons burden. They serve to transport cannon and provisions for ships of war and the like. These vessels are peculiar to the Mediterranean Sea, and are usually navigated by Italians, Greeks, or Mahometans.

SETTING, in the sea-language. To set the land or the sun by the compass is to observe how the land bears on any point of the compass, or on what point of the compass the sun is. Also, when two ships sail in sight of one another, to mark on what point the chased bears, is termed setting the chase by the compass.

SETTING, among sportsmen, a term used to express the manner of taking partridges by means of a dog peculiarly trained to that purpose. See SHOOTING.

SETTLE, *n. s.* Saxon, *ferol*. A seat; a bench; something to sit on.

From the bottom to the lower *settle* shall be two cubits. *Ezek. xliii.*

The man, their hearty welcome first exprest,  
A common *settle* drew for either guest,  
Inviting each his weary limbs to rest. *Dryden.*

SET'TLE, *v. a. & v. n.* { Sax. *ferol*. Prob-

SET'TLEDNESS, *n. s.* } bly, as Dr. Johnson

SET'TLEMENT. } suggests, from the noun substantive above, or a frequentative of set. To fix; confirm; establish; compose; applied, both literally and metaphorically: as a verb neuter, to fix one’s self; to subside; become fixed; repose; grow calm; fix a contract: settledness means the state of being settled: settlement the act or place of settling, or arrangement made; residence.

I will settle you after your old estates, and will do better unto you than at your beginnings. *Ezek. xxxvi.*

Till the fury of his highness settle,  
Come not before him. *Shakspeare. Winter’s Tale.*

The wind came about and settled in the west, so as we could make no way. *Bacon.*

So do the winds and thunders cleanse the air,  
So working seas settle and purge the wine. *Davies.*

What one party thought to rivet to a settledness by the strength and influence of the Scots, that the other rejects and contemns. *King Charles.*

When thou art settling thyself to thy devotions,  
Imagine thou hearest thy Saviour calling to thee as  
he did to Martha, Why art thou so careful? *Dupper.*

In hope to find  
Better abode, and my afflicted powers  
To settle here.

*Milton.*

Settled in his face I see  
Sad resolution.

*Id.*

That country became a gained ground by the  
mud brought down by the Nilus, which settled by  
degrees into a firm land. *Browne's Vulgar Errors.*

Exalt your passion by directing and settling upon  
an object, the due contemplation of whose loveliness  
may cure perfectly all hurts received from mortal  
beauty. *Boyle.*

Every man living has a design in his head upon  
wealth, power, or settlement in the world.

*L'Estrange.*

My flocks, my fields, my woods, my pastures take,  
With settlement as good as law can make. *Dryden.*

Your fury then boiled upward to a foam;  
But, since this message came, you sink and settle,  
As if cold water had been poured upon you. *Id.*

His banished gods restored to rites divine,  
And settled sure succession in his line. *Id. Aeneid.*

This exactness will be troublesome, and therefore  
men will think they may be excused from settling the  
complex ideas of mixed modes so precisely in their  
minds. *Locke.*

This, by a settled habit in things whereof we have  
frequent experience, is performed so quick that we  
take that for the perception of our sensation which is  
an idea formed by our judgment. *Id.*

One part being moist and the other dry occasions  
its settling more in one place than another, which  
causes cracks and settling in the wall.

*Mortimer's Husbandry.*

Cover ant-hills up, that the rain may settle the  
turf before the spring. *Id.*

Fullers' earth left a thick settlement. *Id.*

According to laws established by the divine wisdom,  
it was wrought by degrees from one form into  
another, till it settled at length into an habitable  
earth. *Burnet.*

When time hath worn out their natural vanity, and  
taught them discretion, their fondness settles on its  
proper object. *Spectator.*

Medals give a very great light to history, confirming  
such passages as are true in old authors and settling  
such as are told after different manners.

*Addison.*

He sighs with most success that settles well. *Garth.*

SETTLE, Elkanah, an English poet, was born in 1648. At the age of eighteen, he entered at Oxford, but quitted the university without taking a degree, and, going to London, commenced author by profession. He wrote numerous political pamphlets, and, in reply to Dryden's poem entitled the Medal, occasioned by the whig party striking a medal to commemorate the throwing out of the bill against the earl of Shaftesbury, a piece called the Medal Reversed; and, soon after, a poem entitled Azaria and Hushai, designed as an answer to the Absalom and Achitophel. In 1685, he published a poem on the coronation of James II., and, about the same time, obtained a pension from the city, for writing an annual inauguration panegyric on lord mayor's day. Settle was, besides, an indefatigable writer for the stage, and produced fifteen dramatic pieces, none of which are now known on the boards. In the decline of life, he received a salary from the proprietor of a

booth at Bartholomew fair, as a writer of "Drolls," which were generally very successful, and is said to have been, at that time, the best contriver of theatrical machinery in the kingdom. He died at the Charter-house, in 1724.

SETTLE, a market-town in the West Riding of Yorkshire, situate on the river Ribble, among the hills which separate the counties of York and Lancaster, sixty miles west by north from York, and 233 north-west by north from London. The town is irregularly built, at the base of a limestone rock which rises 300 feet above the level of the town, and the parish church is at Giggleswick, on the opposite side of the river, over which there is a stone bridge. The cotton mills here and in the vicinity employ a great number of the inhabitants. The market-place is spacious, and the market on Tuesday is well attended; there is also a good market for cattle every fortnight. Fairs, Thursday before Good-Friday for cattle; three fairs every other Friday thence till Whitsuntide, also for cattle; April 26th for sheep; Whit-Tuesday for woollen-cloth and pedlary; August 19th for leather and cattle; August 20th for sheep and wool; the day following for woollen cloth and pedlary, and the first Tuesday after October 27th for cattle. In the neighbourhood are several vestiges of Roman fortifications, and on the top of an adjacent moor is Malham Tarn, a lake abounding with trout. Near the town is a curious ebbing and flowing well; a square reservoir of stone, four feet by three, is placed over it, and in this trough the water rises and falls about a foot in ten or fifteen minutes.

SETTLEMENT, ACT OF, in British history, a name given to the statutes 12 and 13 W. III. c. 2., whereby the crown was limited to his present majesty's illustrious house; and some new provisions were added, at the same fortunate era, for better securing our religion, laws, and liberties; which the statute declares to be the birthright of the people of England, according to the ancient doctrine of the common law.

SETUAN, a province of China, bounded on the north by Chansi, east by Koei-tcheou and Yunnan, and west by Thibet. It is watered by the Yang-tse-kiang; and its divisions, productions, animals, minerals, &c., being the same with those of Se-tchuen, we suppose they are one and the same. They are both represented as far from the sea-coast. Setuan abounds with stags, deer, partridges, parrots, &c., and a peculiar species of fowls which are covered with wool instead of feathers.

SETUBAI, or ST. UBBES, a large town of Portugal, at the mouth of the river Sado, sixteen miles S.S.E. of Lisbon. In the earthquake of 1755 it was almost entirely levelled, but soon rebuilt in a much better style, and the whole fortified with a mound, a citadel called San Felippe, &c. The streets are now paved, and the harbour and the quays broad and spacious. It contains five churches, eleven monasteries, a hospital and arsenal. Its trade is active in the export of lemons, olives, oil, wine (particularly a species of muscadet), and, above all, in bay salt, of which no less than 200,000 tons are made annually. Population 12,000.

SEVASTOPOL, a town of European Russia, in the Crimea, on a bay of the Euxine. This was one of the chief mercantile towns of the ancient Colchis: in modern times it has been known only as a petty Tartar village, called Achtiar, which has been erected into a town by Russia. Its increase has since been rapid; it has several good hospitals, docks and dock-yards, barracks, an arsenal, a lazaretto, a large market-place, &c. The harbour is excellent, and is the station of part of the Russian fleet. The principal bay runs up between four and five miles into the land, is perfectly sheltered, and without a single shoal. Inhabitants 3000. Forty-two miles south of Eupatoria, and forty-two south-west of Simferopol.

SEVEN, *adj.*

SEVENFOLD, *adj. & adv.*

SEVENIGHT, *n. s.*

SEVENSORE, *adj.*

SEVENTEEN,

SEVENTEENTH,

SEVENTH,

SEVENTHLY, *adv.*

SEVENTIETH, *adj.*

SEVENTY.

Whosoever slayeth Cain, vengeance shall be taken on him *sevenfold.*

*Genesis iv. 15.*

Of every clean beast thou shalt take to thee by *even.*

*Genesis.*

In the six hundredth year of Noah's life, the second month, the *seventeenth* day, were all the fountains of the great deep broken up.

*Id. vii. 11.*

Rome was either more grateful to the beholders, or more noble in itself, than justs with the sword and lance, maintained for a *sevennight* together.

*Sidney.*

Let every man be master of his time

Till *seven at night.*

*Shakspeare, Macbeth.*

The *sevenfold* shield of Ajax cannot keep  
The battery from my heart.

*Id. Antony and Cleopatra.*

Iago's footing here anticipates our thoughts  
A *sevennight's speed.*

*Id. Othello.*

Worthy Marcus,

Had we no quarrel else to Rome, but that  
Thou art thence banished, we would muster all,  
From *twelve* to *seventy.*

*Id. Coriolanus.*

Upon this dreadful beast with *sevenfold* head  
He set the false Duessa, for more awe and dread.

*Faerie Queen.*

Pharmis, king of the Medes, it is said, he overthrew and cruelly murdered, with his *seven* children.

*Raleigh.*

Shining woods, laid in a dry room, within a *seven-*  
*night* lost their shining.

*Bacon's Natural History.*

The old countess of Desmond, who lived till she  
was *sevenscore* years old, did dentize twice or thrice;  
casting her old teeth, and others coming in their  
place.

*Bacon.*

The child born in the *seventh* month doth com-  
monly well.

*Id.*

*Seventy*, living bodies have sense, which plants  
have not.

*Id.*

Not for that silly old morality,  
That, as these links were knit, our loves should be,  
Mourn I, that I thy *sevenfold* chain have lost,  
Nor for the luck's sake, but the bitter cost.

*Donne.*

We call not that death immature, if a man lives  
till *seventy.*

*Taylor.*

What if the breath that kindled those grim fires,  
Awaked, should blow them into *sevenfold* rage.

*Milton.*

*Id.*

Wrath meet thy flight *sevenfold.*  
The conquest of Ireland was perfected by the  
king in the *seventeenth* year of his reign.

*Judge Hale.*

So Pharaoh, or some greater king than he,  
Provided for the *seventh* necessity:  
Taught from above his magazines to frame;  
That famine was prevented ere it came.

*Dryden.*

The weight of *seventy* winters prest him down,  
He bent beneath the burthen of a crown.

*Id.*

Fair queen,  
Who swayedst the sceptre of the Pharian isle,  
And *sevenfold* falls of disemboguing Nile.

*Id.*

In the Hebrew there is a particle consisting but  
of one single letter, of which there are reckoned up  
*seventy* several significations.

*Locke.*

This comes from one of those untuckered ladies,  
whom you were so sharp upon on Monday was  
*sevenight.*

*Addison.*

SEVENOAKS, a town of England, in Kent, so named from seven large oaks, near which it was built, twenty-three miles and a half south-east from London. The town is well built, and consists chiefly of two wide streets, in one of which stands the ancient market-house in which the petty sessions for the lathe of Sutton-at-Hone are held. The church is a conspicuous object for many miles round the country. The town is governed by a warden, a bailiff, and four assistants. In it is a good free grammar-school, and an alms-house for thirty-two aged people, erected by Sir William Sevenoaks, who was a deserted child and was found in Seven-Oaks, and afterwards became lord mayor of London. At the end of the town is Knowle Park, the seat of the duke of Dorset. The building is quadrangular, and is a noble pile of architecture, covering, with its adjacent buildings, above five acres of land. The whole of the galleries and chambers are furnished with pictures, which are the best performances of most of the celebrated masters. Market on Saturday. Fairs, July 10th, and October 12th. The rectory is valued at £13 6s. 8d., and the vicarage at £15 3s. 1d.

SEVENOAKS (Sir William), a fortunate foundling, born and exposed in the above town in the latter part of the fourteenth century. Having the good fortune to be taken care of, and educated by a benevolent citizen, whose name is not recorded, though it deserves to be eternized, he rose by his industry and merit to be lord mayor of London, and to be knighted, in 1418. In gratitude for the attention bestowed on his helpless infancy in the above town, he built a hospital in it for aged people, with a free school for children. Queen Elizabeth augmented its revenues, and it was rebuilt in 1727.

SEVER, *v. a. & v. n.*) Fr. *sevrer*; barb.  
SEVERAL, *adj. & n. s.*) Lat. *severo*, of Lat.  
SEVERALLY, *adv.* separo. To divide;  
SEVERALTY, *n. s.* part by violence;  
SEVERANCE. force asunder; separate;  
rate; disjoin; keep apart or distinct: make a separation; suffer a separation: hence several means distinct; differently from another; divers; particular; single; appropriate: the adverb corresponding: severality is state of separation: severance, the act of separating; partition.

The angels shall sever the wicked from among the just.

*Matthew.*

*More profit is quieter found  
Where pastures in several be,  
Of one silly aker of ground  
Than champion maketh of three.*

*Tusser's Husbandry.*

They are not so far disjoined and severed, but that they come at length to meet. *Hooker.*

They had their *several* for heathen nations, their *several* for the people of their own nation, their *several* for men, their *several* for women, their *several* for their priests, and for the high priest alone their *several*. *Id.*

Consider angels each of them *severally* in himself, and their law is, All ye his angels praise him. *Id.*

This by some *severals*

Of headpiece extraordinary, lower messes  
Perchance are to this business purblind. *Shakspeare.*

There was not time enough to hear

The *several*. *Id.*

Our force by land

Hath nobly held; our *severed* navy too  
Have knit again, and float.

*Shakspeare. Antony and Cleopatra.*

This axiom is of large extent, and would be *severed* and refined by trial. *Bacon.*

There was a nobleman that was lean of visage, but immediately after his marriage he grew pretty plump and fat. One said to him, Your lordship doth contrary to other married men; for they at first wax lean, and you wax fat. Sir Walter Raleigh stood by and said, There is no beast, that if you take him from the common, and put him into the *several*, but will wax fat. *Id.*

The jointure or advancement of the lady was the third part of the principality of Wales, the dukedom of Cornwall, and the earldom of Chester, to be set forth in *severity*. *Id.*

The conquest of Ireland was made piece and piece, by *several* attempts, in *several* ages.

*Davie's History of Ireland.*

Having considered the apertions in *severity*, according to their particular requisites, I am now come to the casting and contexture of the whole work. *Wotton.*

Those rivers inclose a neck of land, in regard of its fruitfulness not unworthy of a *severance*.

*Carew's Survey of Cornwall.*

This country is large, having in it many people, and *several* kingdoms.

*Abb't's Description of the World.*

That will appear to be a methodical successive observation of these *severals*, as degrees and steps preparative the one to the other.

*Hammond's Fundamentals.*

The night came and *severed* them, all parties being tired with the duty of the day. *Clarendon.*

What thou art is mine:

Our state cannot be *severed*, we are one,  
One flesh; to lose thee were to lose myself. *Milton.*

This else to *several* spheres thou must ascribe.

*Id.*

Four *several* armies to the field are led,  
Which high in equal hopes four princes head.

*Dryden.*

He, with his guide, the farther fields attained;  
Where, *severed* from the rest, the warrior souls re-mained. *Id.*

The apostles could not be confin'd  
To these or those, but *severally* design'd  
Their large commission round the world to blow.

*Id.*

*Several* of them neither arose from any conspicuous family, nor left any behind them.

*Addison's Freeholder.*

Others were so very small and close together, that

I could not keep my eye steady on them *severally*, so as to number them. *Newton's Opticks*

Forgetful queen, who *severed* that bright head,  
Which charmed two mighty monarchs to her bed.  
*Granneville.*

Each might his *sev'ral* province well command,  
Would all but stoop to what they understand. *Pope.*

SEVER (St.), a considerable town of France, the chief place of an arrondissement in the department of the Landes. It is not a seaport, but stands on the Adour, has 9000 inhabitants, and carries on a considerable trade in wine and brandy. Twenty-four miles east of Dax, and seventy-three south by east of Bourdeaux. Also a small town of France, in Normandy, department of Calvados, near the forest of St. Sever. Population 1500. Six miles west of Vire, and thirty-one south-west of Caen.

SEVERANCE, in law, is the singling or severing two or more that join or are joined in the same writ or action. As if two join in a writ, de libertate probanda, and the one be afterwards nonsuited; here severance is permitted, so as, notwithstanding the nonsuit of the one, the other may severally proceed. There is also severance of the tenants in assize, when one, two, or more disseisees appear upon the writ, and not the other. And severance in debt, where two executors are named plaintiffs, and the one refuses to prosecute. We also meet with severance of summons, severance in attaints, &c. An estate in joint-tenancy may be severed and destroyed by destroying any of its unities. 1. That of time, which respects only the original commencement of the joint estate, cannot indeed, being now part, be affected by any subsequent transaction. But, 2. The joint tenants' estate may be destroyed without any alienation, by merely disuniting their possession. 3. The jointure may be destroyed, by destroying the unity of title. And, 4. By destroying the unity of interest.

SEVERE, *adj.* Fr. *severe*; Lat. *severus*.

SEVERELY, *adv.* Sharp; rigorous; hard; ri-

SEVERITY, *n. s.* rigid; not lax: hence censorious; austere; grave; sober; sedate: the adverb and noun substantive corresponding.

I laugh to see your ladyship so fond,  
To think that you have aught but Talbot's shadow  
Whereon to practise your *severity*. *Shakspeare.*

Never were so great rebellions expiated with so little blood; as for the *severity* used upon those taken in Kent, it was but upon a scum of people. *Bacon.*

Let your zeal, if it must be expressed in anger, be always more *severe* against thyself than against others. *Taylor.*

Soon moved with touch of blame, thus Eve:  
What words have passed thy lips, Adam *severe*? *Milton.*

Truth, wisdom, sanctitude, *severe* and pure,  
*Severe*, but in true filial freedom placed. *Id.*

These piercing firs are soft, as now *severe*. *Id.*

Though nature hath given insects sagacity to avoid the winter cold, yet its *severity* finds them out. *Hale's Origin of Mankind.*

Your looks must alter, as your subject does,  
From kind to fierce, from wanton to *severe*. *Waller.*

Their beauty I leave it rather to the delicate wit of poets, than venture upon so nice a subject with my *severer* style. *More.*

What made the church of Alexandria be so *severe*

with Origen for, but holding the incense in his hands, which those about him cast from thence upon the altar? yet for this he was cast out of the church.

*Stillingfleet.*

The Latin, a most *severe* and compendious language, often expresses that in one word, which modern tongues cannot in more. *Dryden.*

More formidable Hydra stands within; Whose jaws with iron teeth *severely* grin *Id.*

Confining myself to the *severity* of truth, becoming, I must pass over many instances of your military skill. *Id.*

If a man would have his conscience deal clearly with him, he must deal *severely* with that. *South's Sermons.*

To be or fondly or *severely* kind. *Savage.*

There is a difference between an ecclesiastical censure and *severity*: for under a censure we only include excommunication, suspension, and an interdict; but under an ecclesiastical *severity* every other punishment of the church is intended; but, according to some, a censure and a *severity* are the same. *Ayliffe.*

Nor blame *severe* his choice, Warbling the Grecian woes. *Pope's Odyssey.*

Taught by thy practice steadily to steer From grave to gay, from lively to *severe*. *Pope.*

We have wasted our strength to attain ends different from those for which we undertook the war; and often to effect others, which after a peace we may *severely* repent. *Swift.*

SEVERINA (St.), a considerable town in the south part of Naples, in Calabria Ultra, situated on a rocky eminence near the Neto. It is the see of an archbishop, and contains 6000 inhabitants. Eighteen miles south of Cosenza, and ninety-three north-east of Reggio.

SEVERN, a river of England and Wales, which rises in the mountain of Plynnlimmon, in Montgomery and Cardiganshires; and flows, first, across the south side of Montgomeryshire, then, turning northward, enters Salop, above the Brythen Hills, at its confluence with the Wirnew. In its course it flows by Welshpool, Shrewsbury, Bridgnorth, Worcester, Tewksbury, and Gloucester, and, entering the sea, its mouth, at its confluence with the Avon, ten miles below Bristol, is called the Bristol Channel. This river, by means of its numerous canals, extends its navigation to all the principal trading districts of the kingdom, being united with the Thames on the east, and with the Trent, Mersey, and Humber, on the north.

SEVERUS (Alexander), an excellent Roman emperor. See ALEXANDER SEVERUS, and ROME.

SEVERUS (Lucius Cornelius), an ancient Latin poet of the Augustan age; whose *Aetna*, together with a fragment *De morte Ciceronis*, were published, with notes and a prose interpretation, by Le Clerc, 12mo., Amsterdam, 1703. They were before inserted among the *Catalecta Virgilii* published by Scaliger; whose notes, with others, Le Clerc has received among his own.

SEVERUS I. (Lucius Septimius), a Roman emperor, who has been so much admired for his military talents that some have called him the most warlike of the Roman emperors. As a monarch he was cruel; and it has been observed that he never performed an act of humanity, or forgave a fault. In his diet he was temperate; and he always showed himself an open enemy

to pomp and splendor. He loved the appellation of a man of letters, and he even composed a History of his own reign, which some have praised for its correctness and veracity. However cruel Severus may appear in his punishments and in his revenge, many have endeavoured to exculpate him, and observed that there was need of severity in an empire where the morals were so corrupted, and where no fewer than 3000 persons were accused of adultery during the space of seventeen years. Of him, as of Augustus, some say that it would have been better for the world he had never been born, or had never died. See ROME.

SEVERUS II. (Flavius Valerius), a short-lived emperor, who was raised to the purple by Galerius; but, being deserted by his soldiers when ready to engage Maxentius, he killed himself, A.D. 307. See ROME.

SEVERUS III., called also Olybius, another short-lived emperor, who was saluted Augustus at Ocavenna, on the death of Majorianus and Anthemius; and his election was approved by the senate; but he was soon after poisoned, A.D. 461. See ROME.

SEVERUS, in church history, a sectary of the second century, a follower of Tatian, and chief of the sect of the Severians. He flourished about A.D. 178.

SEVERUS (Sulpicius), a historian who flourished in the beginning of the fifth century, and by his writing acquired the title of the Christian Sallust. He was born at Aquitain, entered into orders, and built a church at Primuliaceum. His principal work is *Sacred History*, which reaches from the Creation to A.D. 400.

SEVERUS'S WALL, in British topography, the fourth and last barrier erected by the Romans against the incursions of the North Britons. See ADRIAN and ANTONINUS'S WALLS. We learn from the Roman historians that the country between the walls of Adrian and Antoninus continued to be a scene of perpetual war and subject of contention between the Romans and Britons, from the beginning of the reign of Commodus to the arrival of the emperor Septimius Severus in Britain, A.D. 206. This last emperor, having subdued the Maeate and repulsed the Caledonians, determined to erect a stronger and more impenetrable barrier than any of the former against their future incursions. Though neither Dio nor Herodian makes any mention of a wall built by Severus in Britain for the protection of the Roman province, yet we have abundant evidence from other writers of equal authority that he really built such a wall. 'He fortified Britain,' says Spartian, 'with a wall drawn cross the island from sea to sea; which is the greatest glory of his reign. After the wall was finished, he retired to the next station, York, not only a conqueror, but the founder of an eternal peace.' To the same purpose Aurelius Victor and Orosius, to say nothing of Eutropius and Cassiodorus: 'Having repelled the enemy in Britain, he fortified the country, which was suited to that purpose, with a wall drawn cross the island from sea to sea.' 'Severus drew a great ditch, and built a strong wall, fortified with several turrets, from sea to sea, to protect that part of the island

which he had recovered from the yet unconquered nations.' As the residence of the emperor Severus in Britain was not quite four years, it is probable that the two last of them were employed in building this wall; according to which account, it was begun A.D. 209, and finished A.D. 210. This wall of Severus was built nearly on the same tract with Adrian's rampart, at the distance only of a few paces north. The length of this wall, from Cousin's House, near the mouth of the Tyne on the east, to Boulness on the Solway Frith on the west, hath been found, from two actual mensurations, to be a little more than sixty-eight English miles, and a little less than seventy-four Roman miles. To the north of the wall was a broad and deep ditch, the original dimensions of which cannot now be ascertained, only it seems to have been larger than that of Adrian. The wall itself, which stood on the south brink of the ditch, was built of free-stone; and, where the foundation was not good, it is built on piles of oak: the interstice between the two faces of this wall is filled with broad thin stones, placed not perpendicularly, but obliquely, on their edges; the running mortar or cement was then poured upon them, which, by its great strength and tenacity, bound the whole together, and made it firm as a rock. But, though these materials are sufficiently known, it is not easy to guess where they were procured; for many parts of the wall are at a great distance from any quarry of free-stone, and, though stone of another kind was within reach, yet it does not appear to have been any where used. The height of this wall was twelve feet besides the parapet, and its breadth eight feet, according to Bede, who lived only at a small distance from the east end of it, and in whose time it was almost quite entire in many places. Such was the wall erected by the command and under the direction of the emperor Severus in the north of England; and considering the length, breadth, height, and solidity, it was certainly a work of great magnificence, and prodigious labor. But the wall itself was but a part, and not the most extraordinary part, of this work. The great number and different kinds of fortresses which were built along the line of it for its defence, and the military ways with which it was attended, are still more worthy of our admiration, and come now to be described. The fortresses which were erected along the line of Severus's wall for its defence were of three different kinds, and three different degrees of strength; and were called by three different Latin words, which may be translated stations, castles, and turrets. Of each of these in their order. The stationes, stations, were so called from their stability and the stated residence of garrisons. They were also called castra, which has been converted into chesters, a name which many of them still bear. These were by far the largest, strongest, and most magnificent of the fortresses which were built upon the wall, and were designed for the head-quarters of the cohorts of troops which were placed there in garrison, and thence detachments were sent into the adjoining castles and turrets. These stations, as appears from the vestiges of them which are still visible, were not all exactly of the same figure nor of the same

dimensions; some of them being exactly squares, and others oblong, and some of them a little larger than others. These variations were no doubt occasioned by the difference of situation and other circumstances. The stations were fortified with deep ditches and strong walls: the wall itself coinciding with and forming the north wall of each station. Within the stations were lodgings for the officers and soldiers in garrison; the smallest of them being sufficient to contain a cohort, or 600 men. Without the walls of each station was a town, inhabited by laborers, artificers, and others, both Romans and Britons, who chose to dwell under the protection of these fortresses. The number of the stations upon the wall was exactly eighteen; and, if they had been placed at equal distances, the interval between every two of them would have been four miles and a few paces: but the intervention of rivers, marshes, and mountains; the conveniency of situations for strength, prospect, and water; and many other circumstances to us unknown, determined them to place these stations at unequal distances. The situation which was always chosen by the Romans, both here and every where else in Britain where they could obtain it, was the gentle declivity of a hill, near a river, and facing the meridian sun. Such was the situation of the far greatest part of the stations on this wall. In general the stations stood thickest near the two ends and in the middle, probably because the danger of invasion was greatest in these places. But the reader will form a clearer idea of the number of these stations, their Latin and English names, their situation and distance from one another, by inspecting the following table, than we can give him with equal brevity in any other way. The first column contains the number of the station, reckoning from east to west; the second contains its Latin, and the third its English name; and the last three its distance from the next station to the west of it, in miles, furlongs, and chains.

No.	Latin name.	English name.	M. F. C.
1	Segedunum	Cousins'-house	3 5 1½
2	Pons Aelii	Newcastle	2 0 9
3	Condercum	Benwell hill	6 6 5
4	Vindobala	Rutchester	7 0 3½
5	Hunnum	Haston-chesters	5 1 7
6	Cilurnum	Walwick-chesters	3 1 8
7	Procolitia	Carrawburgh	4 5 3½
8	Borovicus	Housesteads	1 3 8
9	Vindolana	Little Chesters	3 6 4
10	AEfica	Great Chesters	2 1 6½
11	Magna	Carvoran	2 6 0
12	Amboglanna	Burdoswald	6 2 8
13	Petriana	Cambeck	2 6 6
14	Aballava	Watchcross	5 1 9
15	Congavata	Stanwix	3 3 4
16	Axelodunum	Brugh	4 0 9
17	Gabrosentum	Brumbrugh	3 4 1
18	Tunnocelum	Boulness	0 0 0
		Length of the wall	68 3 3

The castella, or castles, were the second kind of fortifications, which were built along the side of this wall for its defence. These castles were neither so large nor strong as the stations, but much more numerous, being no fewer than eighty-one. The shape and dimensions of the castles, as appears from the foundations of many of them which are still visible, were exact squares of sixty-six feet every way. They were fortified on every side with thick and lofty walls, but without any ditch, except on the north side; on which the wall itself, raised much above its usual height, with the ditch attending it, formed the fortification. The castles were situated in the intervals between the stations, at the distance of about seven furlongs from each other; though particular circumstances sometimes occasioned a little variation. In these castles guards were constantly kept by a competent number of men detached from the nearest stations. The turrets, or turrets, were the third and last kind of fortifications on the wall. These were still much smaller than the castles, and formed only a square of about twelve feet, standing out of the wall on its south side. Being so small they are more entirely ruined than the stations and castles, which makes it difficult to discover their exact number. They stood in the intervals between the castles; and from the faint vestiges of a few of them it is conjectured that there were four of them between every two castles, at the distance of about 300 yards from one another. According to this conjecture the number of the turrets amounted to 324. They were designed for watch-towers and places for sentinels, who, being within hearing of one another, could convey an alarm or piece of intelligence to all parts of the wall in a very short time. In these stations, castles, and turrets, a very considerable body of troops was constantly quartered for its defence. The usual complement allowed for this service was as follows:—

1. Twelve cohorts of foot, consisting of 600 men each . . . . .	7,200
2. One cohort of mariners in the station at Boulness . . . . .	600
3. One detachment of Moors, probably equal to a cohort . . . . .	600
4. Four alæ or wings of horse, consisting, at the lowest computation, of 400 each . . . . .	1,600
	10,000

For the convenience of marching these troops from one part of the wall to another, with the greater ease and expedition, on any service, it was attended with two military ways, paved with square stones in the most solid and beautiful manner. One of these ways was smaller, and the other larger. The smaller military way ran close along the south side of the wall, from turret to turret, and castle to castle. The larger way did not keep so near the wall, nor touch at the turrets or castles, but pursued the most direct course, and was designed for marching larger bodies of troops. There have been discovered, in or near the ruins of this wall, a great number of small square stones, with very short and gene-

rally imperfect inscriptions upon them; mentioning particular legions, cohorts, and centurics. Of these the reader may see no fewer than twenty-nine among the Northumberland and Cumberland inscriptions in Mr. Horsley's *Britannia Romana*. It is highly probable that they have been originally placed in the face of the wall. From the uniformity of these inscriptions they were all intended to intimate that the adjacent wall was built by the troops mentioned in them. This great work was executed by the second and sixth legions, these being the only legions mentioned in these inscriptions. Now if this prodigious wall, with all its appendages of ditches, stations, castles, turrets, and military ways, was executed in the space of two years by two legions only, which, when most complete, made no more than 1200 men, how greatly must we admire the skill, the industry, and discipline of the Roman soldiers, who were not only the valiant guardians of the empire in times of war, but its most active and useful members in times of peace! This wall of Severus, and its fortresses, proved an impenetrable barrier to the Roman territories for nearly 200 years. But about the beginning of the fifth century, the Roman empire being assaulted on all sides and the bulk of their forces withdrawn from Britain, the Maeatae and Caledonians, now called Scots and Picts, became more daring; and some of them breaking through the wall, and others sailing round the ends of it, they carried their ravages into the very heart of Provincial Britain. These invaders were indeed several times repulsed after this by the Roman legions sent to the relief of the Britons. The last of these legions, under Gallio of Ravenna, having, with the assistance of the Britons, thoroughly repaired the breaches of Severus's wall and its fortresses, and exhorted the Britons to make a brave defence, took their final farewell of Britain. It soon appeared that the strongest walls and ramparts are no security to an undisciplined rabble, as the unhappy Britons then were. The Scots and Picts met with little resistance in breaking through the wall, while the towns and castles were tamely abandoned to their destructive rage. In many places they levelled it with the ground, that it might prove no obstruction to their future inroads. From this time no attempts were ever made to repair this noble work. Its beauty and grandeur procured it no respect in the dark and tasteless ages which succeeded. It became the common quarry for more than 1000 years, out of which all the towns and villages around were built; and it is now so entirely ruined that the penetrating eyes of the most poring and patient antiquarian can hardly trace its vanishing foundation.

SEVIGNE' (Mary de Rabutin, marchioness of), a French lady, born in 1626. When only a year old she lost her father, who was killed in the descent of the English on the isle of Rhé, where he commanded a company of volunteers. In 1644 she married the marquis of Sevigné, who was slain in a duel by the chevalier d'Albert in 1651. She had by him a son and a daughter, to the education of whom she afterwards devoted her whole attention. Her daughter was married in 1669 to the count of Grignan,

who conducted her to Provence. Madame de Sevigné consoled herself by writing frequent letters to her daughter. She fell at last the victim to her maternal tenderness. In one of her visits to Grignan she fatigued herself so much during the sickness of her daughter that she was seized with a fever, which carried her off on the 14th of January 1696. The Compte de Bussi describes her as a lively gay coquette, a lover of flattery, fond of titles, honors, and distinction : M. de la Fayette as a woman of wit and good sense, as possessed of a noble soul, formed for dispensing benefits, incapable of debasing herself by avarice, and blessed with a generous, obliging, and faithful heart. Both these portraits are in some measure just. That she was vain-glorious appears from her own letters, which also exhibit undoubted proofs of her virtue and goodness of heart. She was acquainted with all the wits of her age. She decided the famous dispute between Perrault and Boileau concerning the preference of the ancients to the moderns, thus, ‘The ancients are the finest, and we are the prettiest.’ She left behind her a most valuable collection of letters, the best edition of which is that of 1775, in 8 vols. 12mo. ‘These letters,’ says Voltaire, ‘are filled with anecdotes, written with freedom, and in a natural and animated style ; are an excellent criticism upon studied letters of wit, and still more upon those fictitious letters which aim at the epistolary style, by a recital of false sentiments and feigned adventures to an imaginary correspondent.’ What makes them in general so interesting is that they are in part historical. They are a record of the manners, the ton, the genius, the fashions, the etiquette, which reigned in the court of Louis XIV. They contain many curious anecdotes nowhere else to be found. A volume entitled *Sevigniana* was published at Paris in 1756, which is a collection of the fine sentiments, literary and historical anecdotes, and moral apophthegms, scattered throughout these letters.

SEVILLE, a beautiful province of Spain, forming the western half of Andalusia, and still retaining the title of kingdom. Its form, though irregular, is compact, containing an area of 9500 square miles. The ecclesiastical division is into two dioceses ; the civil into ten districts. The chief towns are :—

	Inhabitants.
Seville, the capital	100,000
Cadiz	70,000
Ecija	28,000
Xeres	20,000
Ossuna	15,000
St. Mary's, near Cadiz	12,000
Population of the entire province	750,000

This province is diversified with beautiful plains, and hills covered in the south with vines and the finest fruit trees. The principal mountain chains are the Sierra Morena, the Sierra de Ronda, the Sierra de Constantina ; but none are of great elevation. They are intersected in some parts by ravines, in others by fertile valleys. The chief rivers are the Guadalquivir, the Guadiana, the Xenil, the Tinto, and the Odiel. The climate is warm, but the extremes are tempered

by cool breezes from the sea or from the mountains : the solano or hot African wind, though not so prevalent as in other provinces, is at times scorching, and blights the crop on the ground in a few hours. The chief hazards to the labors of the husbandman arise from drought. The winter may be compared to a mild spring in the south of England.

The basis of most of the mountains is limestone or marble ; and mines of gold and silver are said to have been formerly wrought. The soil differs greatly according to situation, being in some places very stony and unproductive, in others a fine black mould. Agriculture is extremely backward. The pasture is good in those situations where either the frequency of rain, the height of the fields, or the use of irrigation, protects it from intense heat ; the climate is very favorable to vines, and the environs of Xeres produce the well known sherry wine ; those of Rota, tent wine (*vino tinto*) ; of St. Lucar, the mancinillo. Large tracts in the southern districts are covered with oranges, lemons, citrons, and limes ; but other tracts of equal extent are almost desolate ; and this in a great measure from the old provincial laws and usages confining the culture of oil and wine to certain families. The price of oxen is generally moderate, but the town dues on butcher's meat at Seville make it cost as much as in London. The chief export is bay salt, prepared and shipped from Cadiz.

The silk manufacture of the province is chiefly conducted in the capital : in other parts there are also manufactures on a small scale of coarse woollen, linen, leather, soap, pottery, and hats, all for home consumption. The export trade is carried on at Cadiz, and consists chiefly in the article of wine sent to England, and of miscellaneous articles to America. The chief sea-port in the south is Algesiras.

To the bad government, and the other drawbacks of Spain in general, this province has to add causes of peculiar suffering ; the disturbances since 1810 in the colonies with which its trade is carried on ; and the repeated occurrence of pestilential disease in Cadiz and the neighbourhood.

SEVILLE, a large city of Spain, in Andalusia, the capital of the province of this name, stands in a fine plain on the left bank of the Guadalquivir, surrounded by an old wall of considerable height, having twelve gates, and 166 turrets. Its circuit is between five and six miles. The population is commonly stated at 100,000. The streets are in the Moorish style, being often so narrow that a person can touch the houses on either side by extending his arms. This mode of building was said to be adopted for the sake of coolness, and to prevent the rays of the sun from penetrating. The streets are in general badly paved ; but most of them have a fountain in the centre : as the water however is seldom cool, the inhabitants are largely supplied from stalls, in different parts of the town, for the sale of filtered water. There are here several beautiful public walks ; one in particular on the bank of the Guadalquivir. The suburbs are tolerably built.

The houses of Seville cover a large space, there being in the middle of each a court with a fountain. On the side towards the streets they have often a mean appearance. There are no fewer than thirty churches, eighty-four convents, and twenty-four hospitals, great and small. The cathedral is a large and magnificent Gothic pile, built in the fifteenth century, and containing eighty-two altars. Its tower, 250 feet in height, is reckoned the finest in Spain. Of the other churches and convents the chief attraction consists in their paintings. A convent called De Buenavista, situated on the opposite side of the Guadalquivir, is remarkable for its extensive prospect, which takes in the mountains of Ronda at a distance of seventy miles to the east, and the Sierra Morena at nearly the same distance north-west.

The other most conspicuous public buildings are the Alcazar or palace, the Lonja or exchange, the artillery school, and the mint. The Alcazar, a Moorish building, was extended by several Christian princes: though the outside is mean, the inside contains several handsome courts, with fountains, galleries, and baths; the garden, said to have remained unchanged since the time of the Moors, has also its fountains, evergreens, and marble walks. In one of the saloons is a collection of Roman antiquities, from the ancient town of Italica in the vicinity. The Lonja, is a modern edifice, of the Tuscan order, finely situated in the centre of a square. It was built by the merchants for an exchange; but now serves chiefly as a deposit for the old official correspondence with America. Here are collections of letters from Cortez, Pizarro, and other invaders of the new world.

Water is brought to Seville from a distance of eight miles by an old Roman aqueduct. The principal rooms of a Moorish residence are also in complete preservation in the form of a double cube, sixty feet in height, and about thirty in breadth and width: the walls are covered with a net-work of exquisite workmanship, on a plaster which does not exhibit a single flaw.

In the time of the Moors Seville had an academy and public library. At present it has an academy for physical sciences, for the fine arts, and a medical society: a university founded in 1502, but almost as backward in science as at the time of its constitution; yet the number of under graduates is about 200. A humbler institution, called St. Elmo, is appropriated to the education of young men for the sea service. This was founded by the son of Christopher Columbus. There is a public library in the cathedral, and another in the archbishop's palace. Seville has genteel society; and the Spanish manners are exhibited here more conspicuously than in most parts of Spain.

The number of silk looms lately at work varied from 2000 to 3000; the silk is brought chiefly from the provinces of Granada and Valencia. Woollens of the coarser kind are also made, but, from the awkwardness of the machinery, are dearer than English cloth: there is here a considerable manufactory of leather for private account, and a very conspicuous one of tobacco and snuff for that of the government.

The mills, to the number, it is said, of 100, are all driven by horses and mules; and a similar work of mechanical power exists in the public cannon foundry.

Vessels drawing more than ten feet water are obliged to load and unload eight miles below Seville; and the largest vessels stop at St. Lucar, at the mouth of the river. The navigation is limited from this cause, but more from a want of industry in the inhabitants, who in general confine their exertions to the supply of immediate wants. Among the exports are wool, goat-skins, fruit, and, in a small quantity, oil and silk. The imports are various manufactures from England, Nuremberg wares from Germany, iron from Bilboa, and colonial produce. The adjacent country is of great fertility, and the markets are plentifully supplied; but the lowness of the ground exposes it to inundations and fogs, which engender agues and fevers.

Seville stands on the site of the Hispanis of the Romans: the date of its foundation is unknown; but it opened its gates to the Moors in 711, soon after their invasion of Spain, and continued in their possession above five centuries. It was taken from them in 1247, after one of the most obstinate sieges mentioned in Spanish history. Since then it has seldom been the scene of military exploits. A treaty was concluded here in 1729 between Spain, England, France, and Holland. In 1755 the city felt the shock of the earthquake of Lisbon, its cathedral having sustained considerable injury. In 1800 it was visited by the pestilential fever which caused such mortality at Cadiz, and it was computed that, between 12th of August and 1st of November of that year, Seville lost nearly a fourth of its inhabitants. On the invasion of Spain by Buonaparte, in 1808, Seville asserted the national independence, and received the junta driven from Madrid. It surrendered, however, to the French, on the 1st of February 1810, and remained in their hands till the 27th of August 1812, on their defeat at Salamanca. It is 254 miles south by west of Madrid, and forty-five north of Cadiz.

Mr. Jacob's observations on the different public buildings of this city, its paintings, manufactures, manners, &c., afford so lively a sketch of this part of Spain, and indeed of Spanish manners and customs generally, that we are induced to make a considerable extract from them. Speaking of the government tobacco works, he says:—‘I went through the interior of the buildings, consisting of twenty-eight courts, round which the rooms for the different branches of the manufactory are arranged. It contains upwards of 100 mills for grinding the snuff, which are turned by horses and mules, while some hundreds of men and boys are employed in rolling leaf tobacco into cigars; but at present, either from the diminished consumption or the contraband trade from Gibraltar, there is not one-eighth part of either the mills, or the apartments for other branches of the manufactory, employed. The snuffs made here are of various kinds. The rappee is a bad imitation of the French snuff of that name; but that which is most esteemed is mixed with an earth from

Almazron, between Lorca and Carthagena, called almagre, a species of ochre; it is mixed with the tobacco in a damp state, and gives it the color, as well as that pungency and flavor, which are so much admired. By calculating the quantity of snuff manufactured and ready for delivery, I found it would produce when sold about 2,000,000 dollars, but this is calculating it at the price at which it is delivered here, which is about ten times as much as it costs the government, unless the expenses of the establishment are, as I suspect them to be, most extravagantly high: indeed I learnt that though the number of laborers was reduced to one-fifth of the usual establishment, yet, that that of the officers, whose salaries are considerable, is the same as when the consumption and consequently the revenues were much greater. I was greatly struck with the rigorous examination the laborers underwent on their leaving the fabrica: they were stripped almost naked, and examined as closely as if they had been working in a diamond mine; and yet, in spite of all these precautions, I was informed that they contrived to secrete considerable quantities.

I went from the Fabrica de Tabaco to see St. Elmo, a naval institution founded by Ferdinand Columbus, son of the discoverer of America, in the year 1526, but the building was not finished till several years after. Its extent and beauty are very considerable, as it was erected at a period when the architecture of Spain was at its height. The objects of this institution are most miserably neglected: it was originally designed for 150 youths, but the number at present amounts to no more than seventy; they are divided into four classes, in one of which merely reading and writing are taught; the other three are designed for the different branches of mathematics; some pretensions are also made to teach geography, algebra, geometry, and trigonometry; but having neither books, nor instruments, nor professors possessing any knowledge, their progress, I fear, is very trifling. The principal employment of the elder boys consists in copying from charts on Mercator's Projection; but their copies were fac-similes of those from which they were taken, and, as they have have no Gunter's scale, nor any other scale of lines, sines, rhumbs, and tangents, they are incapable of constructing charts on a scale different from those before them. The name of algebra is, indeed, upon the list of studies, but the professor did not affect to understand it, and, on every subject connected with nautical science, displayed little more knowledge than most of the masters of our coasting merchant ships; he had heard of ascertaining the situation of a ship by lunar and stellar observations, and by two altitudes of the sun; but understood neither the practice nor the principles, nor even the mode of calculating azimuths and amplitudes! After seeing this institution, the superiority of British navigators is no longer surprising. In our schools for naval education, such as Christ's Hospital, Greenwich school, and especially the academy at Portsmouth, every facility is afforded to the pupils, which instruments, books, and tutors can bestow; and it is the boast of science, that some of the bravest

officers that ever conducted British seamen to victory have been the best practical mathematicians and astronomers of their age. But, to return from this digression, the library is very deficient in books; with the exception of the French Encyclopædia, and a few works on astronomy in the same language, there are none adapted to a naval institution. The religious part of the establishment is, as usual, not neglected; a handsome church, with some tolerable pictures, rich plate, and a good house for the spiritual tutor, seem to have had more attention bestowed upon them than any other department. The expenses of this institution are defrayed by a small tonnage duty upon every ship that sails to America.

The aqueduct which supplies the city with water terminates at the gate leading to Madrid; it is called Los Canos de Carmona, not because the water is conveyed from that city, but because the name of this gate is Puerto de Carmona. It has been a matter of dispute whether this be a Roman or Moorish work, to me it appears a mixture of both; it was probably constructed originally by the former, and afterwards, as the work decayed, repaired by the latter. The arches are of different construction, some resembling the Roman, others the Moorish; which last approach nearer to the form of a horse-shoe, and terminate within the perpendicular that supports them. The water is conveyed from a hill, where it rises, near the town of Alcalá, about eight miles from the city. The aqueduct stands on arches twelve feet in diameter, and is supported by pillars nearly thirty feet high, in the part which I examined; but these necessarily vary in height according to the level of the ground over which the aqueduct is carried. The water is conducted in an open canal on the top of the arches, and forms a constant stream three feet wide and two feet deep, and is esteemed excellent; a part is received into a large reservoir near the gate, and the remainder is conveyed by pipes to the alcázar, the public fountains, and the houses of private individuals. It is obvious that the Romans, as well as the Moors, were acquainted with the method of taking the levels necessary for conducting water to their cities, though they do not appear ever to have applied that knowledge in the construction of canals, to transport heavy productions from one part of a country to another. It is also no less evident that they were unacquainted with the fact that water in a tube or pipe will ascend to its original level, or they would have supplied their cities with water by means of pipes, in preference to the far more expensive mode of conveying it by aqueducts.

The royal cannon foundry is a very fine building, where 200 men are constantly employed in casting and boring guns of a large calibre. The shape and ornaments of the guns are very beautiful, and they are turned and bored by the machinery used in England for similar purposes. The greatest deficiency, I observed, was the total want of machinery to facilitate labor. It is, however, the best arranged institution I have hitherto seen in Spain. The principal manager is Señor Vedal, a native of Catalonia,

who politely attended us through the building, and explained every part with great minuteness. He is not only a practical man, but understands chemistry and mineralogy; he is also well acquainted with the English, French, and Swedish writers on those subjects, and speaks with rapture of the recent discoveries of our countryman Davy, whose account of the new metals reached him only a short time ago. I expressed some surprise at the great number of brass guns, and remarked that the English used iron for battering cannon, which were equally serviceable, and cost no more than one-fifth the expense; he admitted the fact, but observed that, as in Spain all the copper mines paid a certain proportion of their produce to the king, that produce, which thus costs nothing, was used for cannon, and sufficiently supplied the exigencies of the state.

'One of the buildings in Seville which displays the best architectural taste is La Lonja, built originally at the expense of the merchants, and designed for an exchange. It forms a square, and each front is 200 feet in length, and, being raised on steps, has a magnificent appearance. The staircase leading to the upper rooms is superbly built of colored marble, about twenty-five feet in breadth, with balustrades, supported by pillars of the same substance: the apartments consist of three rooms in front, each 180 feet long, and four others, lighted from the patio, of smaller dimensions; the whole forms a grand building, and does honor to the taste of the age in which it was erected. The apartments are furnished with book-cases, which contain all the correspondence with America, from its first discovery to the present time, arranged and neatly docketed; and reference may be made to any paper with great facility. The original letters of Cortez and Pizarro are deposited in these cases, and will some day probably throw light on the history of that period. It is certain that the Spanish historians have neglected to examine these valuable documents, and the writers of later date have contented themselves with quoting Robertson, whose book, with all its deficiencies, contains more accurate views, and more extensive knowledge, of the affairs of the Spaniards in America 300 years ago, than the work of any author of their own nation. La Lonja was completed in the year 1598 by Juan de Herrera, one of the most celebrated architects in Spain. In early life he visited Italy in a military capacity, and availed himself of that opportunity to study the various models of art with which that country abounds; he was an excellent mathematician, and applied his knowledge and taste to the study of architecture. After the death of Juan Bautista de Toledo he was employed in completing the Escorial, which established his fame, and occasioned his being created a knight of St. Iago, quarter-master-general of the royal palace, and superintendent of the royal mansions. I wished to make a sketch of this building, and one of the canons of the cathedral introduced me to the house of a lady opposite, where I had a good view of it. As I used the camera lucida, the astonishment of the good lady and her domestics was not a little excited; and perhaps I might have been taken

for a magician if I had not been the friend of a priest, for nothing could exceed their surprise when they saw the building before them reflected on the paper, reduced to a small compass, and every part exact.

'The Casa Moneda, or mint, is at present very little used; owing to the scarcity of silver, few of the presses were at work, but enough were employed to show the imperfection of the machinery: the presses are worked by manual labor, and the dyes are very bad; the slowness of the work renders the coinage expensive even here, where manual labor is comparatively cheap.

'The outside of the Alcazar is miserable in its appearance; but the first court, after entering the gate has a very grand effect: the front, looking into that court, is purely Arabic in its style, and the inscriptions favor the idea of its being built by that people; it is, nevertheless, ascertained to have been constructed since the conquest, by the Christians; and, indeed, the arms of Castile and Leon are mingled with the Arabic characters. The flight of stairs leading to the royal apartments, now occupied by Garay, is of marble; and some galleries of the same material lead to other parts of the building. The courts are ornamented with marble fountains, and are well shaded with corridors, supported by marble pillars. The hall, now occupied by the Junta, formerly called the Hall of Ambassadors, is a beautiful apartment, adorned with elegant designs in stucco, and with a floor of the most transparent marble, of various colors. The rooms adjoining are occupied by the different committees, or, as they are called, sections, into which the Junta is divided, and the whole palace, which is very extensive, is filled by the different branches of the government, whose clerks have offices very well adapted for the despatch of business, from their proximity to each other. The garden of the Alcazar is said to have been laid out by the Moors, and is preserved in its original state, it contains walks paved with marble, parterres laid out with evergreens, and well shaded with orange trees. In many parts of it there are baths, supplied by marble fountains from the aqueduct, and they have a contrivance for rendering the walks one continued fountain, by forcing up small streams of water from minute pipes in the joining of the slabs, which in this climate produces a most grateful effect. As a specimen of an Arabian garden, in its original state, this is an interesting object, and we naturally associate with it recollections gathered from the eastern writers, especially from the Song of Solomon, in the Scriptures, in which the descriptions very well agree with this garden: for, in addition to the other circumstances, it is completely walled round, and is secluded from every one except the inhabitants of one part of the palace.

'On Sunday I went to the cathedral, to see the ceremony of high mass. There is a pomp and splendor in the Catholic worship, when performed in a country where that religion is established, which, like any other pageant, dazzles for a moment, and confines the attention to the imposing spectacle; but it is so different from any of our feelings of religion, that the impres-

sion it makes upon us differs little from that which the best scenes in a theatre produce. On those, however, who from early and repeated association have connected these ceremonies with religious ideas, and with the strong feelings of adoration and gratitude, the effect produced must be very great, though I should suspect very transient. I have frequently visited this church before, and every time with such increased admiration that I am afraid to attempt a description of it, from a consciousness of the difficulty to do justice to my own impressions. From the climate, it is necessary to exclude the heat, and of course the light; there are consequently but few windows, and those of painted glass, barely sufficient to give light enough to distinguish, on first entering, the various surrounding object. This produces a solemn effect on the high altar, which is brilliantly illuminated with wax-tapers of an enormous size. The decorations of this altar are splendid and sumptuous beyond description; the quantity of gilding on the borders of the different compartments, filled with images and pictures, the massive silver and gold ornaments, and the rails of bronze, tastefully designed, compose a most impressive whole. The priests kneeling before the altar, and in silence offering up their devotions, the clouds of ascending incense, and the pious on their knees, in the most striking attitudes, altogether form a scene that at once captivates the imagination, and suspends the reasoning faculties; it is a scene to be felt but not described; the sensations it produces may be indulged, but cannot long delude a reflecting mind.

In the midst of the gaieties which commence about five o'clock in the evening, when the paseo, or public walk, is crowded with company dressed in their most splendid attire, and indulging in the liveliest conversation, the sound of a bell announces the approaching hour of sunset. At this signal, which is called oracion, every one, as if by magic, seems fixed in his place; every head is uncovered, and the whole company repeats, or is supposed to repeat, a mental prayer; after a few minutes, devoted to these formalities, the lively scene is resumed, and the conversation continued from the point at which it met this pious interruption. This ceremony takes place in every part of Spain; and, where theatres or other public amusements are open, the sound of this bell suspends the entertainment till the prayer is over; so great is its effect, that it is even said that assassins, at the moment of executing their horrid design, have held their hand at the sound of the oracion, and, after repeating the habitual prayer, have perpetrated their diabolical purpose. I have reason to suspect that this practice, as well as some others, arises more from conformity to the usages of their country, than from any strong religious feelings; for I have observed in private houses, that the attention paid to this bell diminishes in proportion to the rank of the family; among the lower classes of people it is usual to kneel or stand up; among those of greater influence they merely sit still and remain silent; while those of the highest rank suffer the bell to toll unheard and unregarded.

'No one of the various religious observances with which this city abounds, appears more ludicrous to me or more solemn to the inhabitants, than the procession of the host to the houses of the sick, at the hour of approaching dissolution. A priest, seated in a sedan chair, with the holy elements in a gold case on his lap, escorted by a guard of soldiers, and preceded by a bellman, is literally denominated by the people 'his majesty coming down the street.' To increase the singularity of the spectacle, the bellman strikes three strokes, in allusion to the three persons of the Trinity, and then ceases. At this well known sound, whatever be the state of the weather, or the condition of the streets, every one drops on his knees, and continues in this devout posture till the object of adoration is out of sight. If this procession should pass through a street containing a theatre or a ball-room, the actors on the stage, and the dancers at the assembly, alike drop on their knees till the sound is lost, when they resume their thoughtless dissipation.

'There are nightly processions through the streets of this city, called the rosario, one of which I mentioned having met, in a former letter, as I entered this place. The different wards conduct this procession by turns, so that it is every night parading in some part of the town; being more or less splendid, according to the revenues of the church or convent whence it proceeds. The rosario is complimented by the inhabitants of the streets through which it passes, by illuminations, that have a splendid effect, but which is in a great measure counteracted by the horrid noise of the singers and chanters.

'The common forms of salutation, perhaps, partake no more of religion than those of other countries; and 'va ja usted con dios,' is only equivalent to the French 'adieu,' or the English 'good bye;' but a mode of expression is adopted much more striking and singular on visiting any family; when you ring or knock, a servant within enquires, 'who calls?' and the person who wishes for admission exclaims, 'Ave Maria purissima,' to which those within, on opening the door, make response, 'Sin pecado concebida'; and as the first of these sentences cannot be uttered by the devil, and the second will not be said by a heretic, there is no danger in the visit when such orthodox formalities have been mutually exchanged. When our party has been introduced into a family, I have frequently heard the enquiry made in a whisper, 'Are they Christians?' if the persons who introduced us replied 'they are Protestants,' a sigh, with the exclamation 'que lastima' (what a pity), frequently escaped their lips. However decorous the Spaniards may be in the performance of their public devotions, nothing can be more indecent and slovenly than the manner in which their domestic worship is conducted; a circumstance which I have frequently noticed in the family with whom I lodge. Towards the conclusion of supper, when seated round the table, the master of the house commences with repeating ten Ave Maria's; the wife repeats the Pater Noster and her ten Ave Maria's, others at table repeat in the same manner, while one of them with a

rosary of beads keeps the account, till they have repeated the Ave Maria fifty times, and the Lord's prayer five times, the number being accurately corrected by the string of beads. They then say a litany, adding to the name of every saint of a long list, 'ora pro nobis'; then a prayer for the dead, another for protection during the night, and conclude the whole with a Gloria Patri. The words are uttered with as much rapidity as possible; and, if any employment calls away the person who is repeating, he performs the work without interrupting the prayer, or losing any time; in fact the Spaniards appear to act slowly and deliberately in every thing they undertake, except it be in this single instance of family worship.

Mr. Jacob adds, 'It would have appeared singular, had I not been prepared for the fact, that among the warmest advocates for the destruction of ancient institutions I have seldom heard the *inquisition* spoken of as an evil of great magnitude. I have introduced the subject frequently, and have uniformly found it treated as an institution which, though originally bad, is now too insignificant to merit attention; and yet two instances have occurred within my own knowledge, since I have been here, which show its meddling disposition. An Englishman had imported some printed handkerchiefs, with patriotic emblems, and the names of the patriot generals. But the printer in England had unfortunately mixed with these patriotic emblems some of the symbols of religion, such as the crozier, the cross, and the mitre. The inquisition became acquainted with the fact, and, fearing that using handkerchiefs on which such sacred objects were imprinted, would tend to bring religion into contempt, seized the whole parcel, and they were burnt by the holy office. Another merchant had a number of bales of Spanish wool, which were about to be shipped for England; by accident these bales were marked with a cross; information of it was conveyed to the inquisitors, and a consultation was held, to determine in what mode proceedings should be instituted against a person who could apply that sacred symbol to so common a purpose. As the person in question was an undoubted Catholic, a friend gave him information of what was going forward, and, being aware of the consequences, he immediately rectified his error by protracting the upright line of the cross, and adding to the bottom of it two flukes, so that, when the officers of the inquisition came to seize the bales, they were found to be marked with an anchor, and not with a cross, as the information had stated.'

'The terror of the inquisition has considerably abated of late years; one of the last victims in this city was Olavide, a most respectable man, who applied the wealth he had acquired in South America to the patriotic purpose of cultivating the Sierra Morena, with a number of German settlers and to adorning and improving the public walks of the city, as well as the wharfs on the banks of the Guadalquivir. He had read the writings of some of the French unbelievers, and was suspected of having imbibed a portion of their opinions, and for this unproved, if not

unfounded charge, he was immured within the walls of a prison, and passed many years of his life amid the horrors of solitary confinement. Since that period the discipline has been confined to a lower class of crimes, and I am informed that the only prisoners, of late, have consisted of those who merited punishment for having acted as the panders to illicit pleasure. I found no difficulty in obtaining permission to see the inquisition, and went through the whole. It is a cheerful, pleasant abode, and does not at all correspond with the ideas of Englishmen respecting it. The hall of judgment contains simply a table, three chairs for the inquisitors, a stool for the secretary, and one which is lower for the prisoner. On the table is a silver crucifix, upon which the deposition is made; and on a small stand a Latin prayer, said by each inquisitor before the trial commences. The prayer is appropriated to a judge, and merely implores divine guidance to enable him to discharge his duty with uprightness and impartiality. The records of this court, with all the processes against those who have been confined, are preserved with regularity in an adjoining room, but are not allowed to be examined. The church is simple and elegant. The interior is of white marble. The form is circular; and it is lighted from a beautiful dome. I saw one of the apartments in which prisoners are confined, and was told the others were similar; it is light and airy, placed in a little garden planted with orange and fig-trees; the door of this garden is strongly secured, and no person can have access to it when the cell is occupied. I enquired if there were any prisoners in confinement, any subterraneous cells or instruments of torture; but to these questions I could obtain no replies. The alcayde, who attended us, exulted not a little at our remarking the neatness and comforts of the building, and, I suspect, mistook us for pious Catholics, because we gave vent to no execrations at the existence of such an infamous tribunal. This building was formerly the college of the Jesuits, the most able and enlightened, but the most dangerous of all the religious orders of the Catholic church. On the abolition of that order, the inquisition was removed, from its former situation in the suburb of Triana, to this building, which I hope will be the last it will occupy in Spain; for, whatever political events may take place, its destruction is inevitably at hand. The remarks I have made on the religion of Spain, you will recollect, are drawn from what I have seen in Seville, a city more esteemed for its piety than any other in Spain; so rigid, indeed, is the religion of this place, and so great the influence of the clergy, that neither a theatre, nor any place of public amusement, is permitted.'

'Of the university of Seville,' he says, 'it is almost solely appropriated to the education of the clergy: the course of study occupies five years, which are principally devoted to the acquirement of the Latin language, the knowledge of civil law, the philosophy of Aristotle, and scholastic divinity. Scarcely any improvement has been introduced within the last 400 years; the philosophy of Bacon, Locke, and Newton, is utterly unknown to either professors or pupils.'

The war has considerably lessened the number of students, as a large portion has entered into the army. They do not reside within the university, but have private lodgings in different parts of the city. The education of the females of the best families is, if possible, still worse. They are early sent to a convent as pensioners, and under the care of some of the aged nuns are instructed in reading, writing, and needle-work, but especially in the outward forms of religion. They are usually kept in these houses of seclusion till they arrive at a proper age, and frequently till some matrimonial engagement is formed. From the retirement of a convent, with all its uniformity and dulness, they are suddenly introduced into circles of gaiety and dissipation, and it is not wonderful that from so violent a change, and from the example of the married females, with whom they associate, they become victims to the dissolute habits of their country.'

Of its *paintings*.—‘ Few places in Europe, with the exception of London and Paris, contain so many good pictures as are to be found in this city. About 170 years ago some of the best painters resided here, especially Murillo, Velasquez, Zubaran, Spagnolete, and Cano ; and such was its celebrity, as a school for painting, that several eminent masters, from other countries, resorted hither for improvement in their profession. Spain made considerable progress in the art of painting during the reign of Charles V., and it was the general custom among the Spanish nobles, who attended that monarch in his visits to Italy and the Netherlands, to purchase and send home to this city, then the capital of Spain, the best pictures they could procure ; some of them have been retained by private families, and others were given to the different churches and convents. Our unhappy sovereign Charles I., when Prince of Wales, contributed to increase the taste for this art in Spain by the love he manifested for the profession, by the honor he paid to the artists, and by the liberal price he gave for their works. He purchased some excellent pictures for his collection, and left directions for some of the best pictures in Madrid to be copied ; especially the works of Titian in the royal palaces. Miguel de la Cruz, an artist of considerable eminence in the court of Philip IV., was occupied several years in copying the best pictures for our unfortunate monarch, which were not all completed when he met his untimely fate.

‘ The best ancient pictures are mostly upon subjects connected with religion ; some of them are portraits of saints and martyrs, whose names as well as sufferings would perhaps have remained unknown, were they not immortalized by the genius of the artist. A great number of excellent paintings have been accumulated here; and indeed a general taste for the art has been established for ages. Most of the well informed men are connoisseurs, and more especially the priests and monks, who, from habitually contemplating, in their churches, the finest specimens of the art, acquire a correctness in their notions of painting, which renders them good judges of even those paintings that are unconnected with religion. A general fondness for the art prevails

in this capital, and most people, particularly the ladies, have in their apartments the best pictures of the Holy Virgin, or some favorite saint, which their circumstances can afford. To these they are much attached, and retain them with care, even when reduced by poverty to sell every thing else. I was yesterday at the house of a lady, the widow of an officer, to see some pictures which necessity compelled her to sell, but which decent pride forbade her to part with to any except a foreigner. In her chamber was a crucifixion, which I admired, and asked if it were to be sold ; ‘ No, Señor, lo tengo por mi devoción ; ’ she then asked with surprise, ‘ Are you a Christian ? ’ On my answering ‘ Yes,’ and that I respected the saints, she expressed herself delighted that among the English, whom she had been told were all Protestants, she had found one who was a Catholic ; for, though she appeared a woman who had moved in a respectable sphere, she had no conception that Christian and Catholic were not precisely synonymous ; and I was too intent on her pictures to find time to correct her vocabulary.

‘ It is scarcely right in relating any thing to commence with the best ; and perhaps I should be wiser were I to delay writing about the pictures of Murillo, till I had described those of some inferior artists ; but, as it happens, I am just returned from inspecting his works in the chapel of St. George, in the Caridad : I shall therefore begin my account with them. The pictures of Murillo which have been brought to England are of small size, and generally contain few figures, so that you can form but a very imperfect idea of the powers of this distinguished artist ; but the pictures of this painter in the Caridad, are about eighteen feet in length, and twelve in breadth. One of them, representing the queen Isabella attending the sick, and washing the wounds on the head of a beggar boy, while a crowd of other invalids, are waiting round in expectation of similar relief, is considered, and I think justly, one of the best compositions of that great master : the pious countenance of the queen, and the anxious looks of the expecting group, are admirably depicted. Another painting, by the same master, is the miracle of the loaves and fishes, in which the figures on the foreground are finely conceived, and the light and shade admirably managed. The picture of the angels appearing to Abraham is finely painted ; but as the idea prevailing in Spain is, that those three angels were the three persons of the Trinity, the artist has thought proper to show the unity in the Trinity by painting all the three angels with exactly the same countenance : notwithstanding this whimsical conceit the picture is a fine one, and the scene of the tent of the Arabian patriarch is most exquisitely painted.

‘ Moses striking the rock is a most wonderful production ; the anxious countenances of the Israelites, all eagerly crowding to the water, are exact representations of what might be supposed the expressions of people in such a state : the figure of the mother with an infant, eagerly stretching out her hand to catch a few drops for her child, another lamenting the delay in obtaining a supply, and a boy mounted on a horse, stretching

forward to the stream, are esteemed the best figures, while the countenances of all discover gratitude to God for this unexpected supply. I never felt so much pleasure from the contemplation of any work of art as from this picture; but, notwithstanding the admirable expressions of the countenances, I could not help admiring the shadow of the rock from which the water gushes out. A passage in the sacred writings mentions as a luxury ‘the shadow of a great rock in a desert wilderness;’ it is here displayed most admirably; the rock is high and large; within its shade the people appear protected from the rays of the sun, which seem to diffuse a burning heat over every other part of the scene.

The Cathedral of Seville contains some paintings by Murillo, but in my judgment very far inferior to those at the Caridad; the best are on the altar of Baptistry; representing St Anthony of Padua, the Baptism of Christ; and the Birth of the Virgin, in the chapel dedicated to St. Paul. Besides these, almost every convent and church in Seville is adorned with some of this master’s productions. I have had the good fortune to meet with some of his sketches, and an admirable portrait of his son, which, if I get them to England, will please you, though they give but a very faint idea of his great powers.

Few pictures have been more praised than those in the church of Santa Cruz, by Pedro de Campana, especially the Descent from the Cross. It is said of this picture, by the learned doctor Francisco Pacheo, that the remaining in this church alone filled him with terror, as he could not divest himself of the idea that the body of Christ was a real object. Two men above are lowering the body to St. John, who receives it with the strongest expression of grief and sensibility. Mary Magdalene kissing the feet, and the Holy Virgin, are admirable figures. The whole piece is an exquisite composition; and, in the judgment of the Spanish connoisseurs, equal to the best productions of Michel Angelo, under whom Campana studied. The picture is about eighteen feet in height and nine in breadth. There are several others in this church by the same master, but this one engrossed my attention too much to allow me to examine the others.’

But we must hasten to conclude our extracts:—‘The architecture of Seville’, adds our author, ‘deserves particular notice, as it is the work of different ages, and possesses very distinct characters. The Arabian, the Gothic, and the Greco-Roman styles, all enter into the structure of the cathedral. Its tower, constructed in the year 1000, is of the Arabian architecture, as well as one of the courts, called the Patio de las Narangas. The Gothic style was not introduced into Spain till the twelfth century; and it still retains the more appropriate epithet of Tudesco or German. The greater part of the cathedral, which was begun in 1482 and finished in 1519, is of this species of architecture. The Greco-Roman, used in Spain, is miserable in the distribution of the parts, lavish in the ornaments, and wants elegance in the whole. The royal chapel of the cathedral is in this style of building, though erected at the same period with the Gothic. The length of the church is 398 feet,

and the breadth 290; the choir and the high altar being in the centre, and the whole crowded with chapels, altars, statues, and pictures, it does not appear so large as it is in reality. The inside of the tower has one singularity; it has no steps, but in their stead a road winds to the top, by which it is said the Emperor Charles V. once rode on horseback to the summit. This certainly would not be difficult if the door to the road were larger, but at present it is so narrow that a man can scarcely enter it. The cathedral contains a fine organ of great power, which is filled with air in a singular manner, by means of a plank placed on the bellows, on which a man walks backwards and forwards, and, as it balances on its centre, his motion fills the organ with air.

A few days ago, I went, with a small party, to see the convent of the Carthusians. It is situated on the banks of the Guadalquivir, above the city, and we found a boat the cheapest and most agreeable conveyance. The convent is a fine building, and the interior is sumptuously decorated. The monks, who are all descended from good families, live with frugality, or rather austerity, and never leave the convent after they have taken the vows. They are not permitted to converse, except with each other, and they are allowed only an hour’s conversation twice in a week; but, if I may judge from the rubicund faces and portly figures of the superiors, when they arrive at the higher stations, they indulge privately in luxuries beyond the limits of their vows. It is easy to conceive that that fanaticism which can induce gentlemen to enter into this order, and to endure the severities during the year of their novitiate, may, after a time, cease; that the fervor of devotion may subside; that some embers of the feelings and habits of past life may be rekindled; and that, after they have begun to languish in their piety, they may fall from the grace of celibacy, or exchange their fasts and penances for a luxurious table, generous wines, and an affectionate mistress. We found the prior a good-tempered friendly man; he expressed much regard for Englishmen, but lamented the wickedness and sensuality of Henry VIII., whose unruly passions, he said, had caused that change of religion so unfortunate for our country. I cannot help remarking, in this place, that there is a material difference between the Catholics and Protestants, in the mode of treating each other on religious subjects. The former generally speak of our religion with a sigh: we too frequently speak of theirs with a sneer. I am afraid something of this kind escaped me, or my younger companions, as his officious kindness evidently ceased after his remark on Henry VIII.; and, though he behaved with politeness, it was ceremonious, and obviously constrained.

The church is very splendid, and elegantly adorned with holy utensils of gold and silver, with some good pictures and statues, and a remarkably fine organ. Among the pictures is the head of John the Baptist and a Salvator Mundi, by Murillo; a St. Peter by Morales, called by way of distinction (as there were several painters of that name) the divine Morales; and, what pleased me more than any others, some fine pieces of Zubaran, an artist whose works are

highly valued in Spain, though they are scarcely known in any other part of Europe. There are three of his productions in the sacristy of this church, with figures as large as life. The subject of one is, St. Bruno conversing with pope Urban II.; the saint is seated; his countenance has the expression of benevolence, and that of the pope of piety and submission. The subject of another picture is St. Hugh in the refectory of this convent, eating with the monks; and a third represents our Saviour on foot, conversing with some Carthusians: there is nothing in the stories, but the artist has contrived to make them interesting. Zubaran's manner somewhat resembles that of Caravaggio; his outlines are correct, and his compositions simple; they contain only a few figures, which are arranged in grave and natural attitudes. I have always had a curiosity to see the collections of books in these repositories of idle devotion, but what I saw here were of no greater value than those in convents less richly endowed. The Carthusians are the richest order in Spain, and the estates of this convent are very extensive and valuable; their revenues are all appropriated to determinate purposes, one portion for subsistence another for the repairs and decoration of the church, and others for the relief of the poor, &c.; all of which being badly administered, the society is considerably involved. They cultivate some large farms, and have in their barns and outhouses a good stock of corn, straw, and oil, as well as horses, cows, and mules, which the government have lately found very beneficial; for, in the present exigencies of the country, the property of these religious houses has not been exempted from contributions. They have a fine garden, and a summer-house overlooking the river. The consumption of wax for candles is so considerable, that they have in this garden all the necessary conveniences for bleaching it.'

**SEVRES**, DIPARTMENT OF THE two, a department of France, comprising about a third of the old province of Poitou, and bounded by the departments of the Maine and Loire, the Charente, and the Vendée. Its superficial extent is 2450 square miles; watered by the Two Sevres, the Dive, the Loire, the Thoue, and a number of inferior streams. The surface is uneven, being intersected from north-east to south-west by a chain of lofty mountains covered with wood; in the south-west it is marshy, but the soil generally is fertile, and the climate favorable. The products are wheat, barley, rye, oats, buck-wheat, and maize; hops grow wild, particularly in the neighbourhood of Niort. Tobacco is partially cultivated, and chestnuts abound, as well as almonds, in the warmer exposures. The tracts of pasture are considerable, and hence a large proportion of horses, cattle, and sheep. The high grounds afford mines of iron, antimony, saltpetre, also quarries of marble. The manufactures (on a small scale) consist of pottery, saltpetre, leather, woollens, cotton, and paper. This department suffered severely in the Vendean war. It is divided into the four arrondissements of Niort, the capital, Bressuire, Parthenay, and Melle. Population 200,000, of whom above 32,000 are Protestants.

**SEVUM MINERALE**, mineral tallow, a substance somewhat resembling tallow, found on the sea-coasts of Finland in 1736. It burns with a blue flame, and smell of grease, leaving a black viscid matter which cannot easily be consumed. It is extremely light; being only of the specific gravity 0·770; whereas tallow is not less than 0·969. It is partly soluble in highly rectified spirit of wine, but entirely so in expressed oils when boiling. It is met with in some of the rocky parts of Persia, but there it appears to be mixed with petroleum. Dr. Herman of Strasburg mentions a spring in the neighbourhood of that city, which contains a substance of this sort diffused through it, separating, and capable of being collected on ebullition. A fat mineral matter resembling butter or tallow has lately been extracted from peat in Lancashire. See PEAT.

**SEW, v.n.** *Lat suo.* To alter any thing by the use of the needle.

My transgression is sealed up in a bag, and thou sewest up mine iniquity. *Job* xiv. 17.

A time to rent and a time to sew. *Eccle.* iii. 7.

No man seweth a piece of new cloth on an old garment. *Mark* ii. 21.

If ever I said loose-bodied gown sew me up in the skirts of it. *Shakspeare. Taming of the Shrew.*

**SEWARD** (Thomas), an English divine, born in 1708. He was rector of Eyam in Derbyshire, and prebend of Litchfield. He wrote a work on the Conformity between Popery and Paganism, and published an edition of Beaumont and Fletcher's plays. He was father of the celebrated Miss Anna Seward. He died at Litchfield, in 1790.

**SEWARD** (William), F. R. S., an ingenious English writer, the son of an eminent brewer in London, born in 1747. He was educated at the Charter-house, and at the university of Oxford, but never took any degree, nor adopted any profession. He had a fine taste for literature; was intimate with the most eminent men of the age; and was chosen fellow of the Royal and Antiquarian Societies. He published Anecdotes of Distinguished Persons, in 5 vols., and a supplement to that work, entitled Biographiana, in 2 vols. He died April 12th, 1799.

**SEWARD** (Anna), the daughter of the Rev. Thomas Seward, rector of Eyam, Derbyshire, prebendary of Sarum, and canon residuary of Litchfield, was born in the year 1747. Her father was himself a poet, and seems to have inspired his daughter with a strong predilection for that department of literature, in which her taste was excellent, and her talents considerable. In the Literary Society of Litchfield, where Miss Seward lived, she held a very distinguished place, and her correspondence with learned and distinguished characters was extensive. For a considerable period her poetical effusions were confined to her social circle; the applause of which at length induced her to commit to the press, Elegiac Commemorations of Major Andr  and Captain Cook, which were favorably received by the public. In 1782, besides other occasional pieces, she published a poetical novel, entitled Louisa, which was also favorably received, and passed through several editions. In 1799 she published a collection of original son-

nets of considerable merit, with translations from Horace of less value. In 1804 Miss Seward published a Biographical Memoir of Dr. Darwin, the friend of her youth; in which there is much curious and interesting literary anecdote, chiefly of the early part of Dr. Darwin's life, and of the Society of Litchfield, while it was the place of his residence. In 1807 our authoress was engaged in arranging for the press the edition of her poems, which was edited, in 1810, by Walter Scott, esq., in 3 vols., with a sketch of her life by that poet, and extracts from her literary correspondence. To Mr. Scott she bequeathed by letter her literary performances, particularly that which she had been so long preparing for the press. Miss Seward died on the 25th of March 1809, having also bequeathed to Mr. A. Constable twelve quarto volumes of letters, from the year 1784 to the period of her death, for publication. Six volumes of these have been published, containing a vast variety of miscellaneous matter, of which the world will judge variously. That Miss Seward's talents and acquirements were considerable will not be questioned. Her prejudices were also great, and her reflections on many persons and subjects are unnecessarily harsh, and severe. In politics, amidst the ever varying scenes of the French Revolution, and of domestic policy connected with that great event, she cannot be exempted from the charge of rashness, injustice, and inconsistency. Miss Seward was undoubtedly a distinguished person; but she already holds in public estimation a far less eminent place than she fixed for herself. In her conduct she was always respectable.

SEWAURY, a Hindoo word, used in Bengal, signifying the train of attendants that accompany a nabob.

SEWELL (George), an English physician and poet, born at Windsor and educated at Eton School; whence he removed to Peter House, Cambridge. He wrote, 1. The Life of John Philips: 2. A Vindication of the English Stage: 3. Sir Walter Raleigh, a tragedy; which was acted, in 1719, at Lincoln's-Inn-Fields. He died in 1726.

SEWELL (William), a native of Holland, born about 1654. He was bred to surgery, and practised it at Amsterdam. He wrote the History of the Rise and Progress of the People called Quakers; and compiled a Dictionary of the English and Low Dutch Tongues.

SEWER, n. s. Fr. *escuyer trenchant*; or old Fr. *asseour*, from *assevoir* to set down; for those officers set the dishes on the table.—Newton. An officer who serves up a feast.

Marshalled feast,  
Served up in hall with *sewers* and seneschals:  
The skill of artifice or office mean. Milton.

The cook and *sewer* each his talent tries,  
In various figures scenes of dishes rise. Swift.

SEWER, n. s. From *issue*, *issuer*. A passage for water to run through, often corrupted to shore.

The fenmen hold that the *sewers* must be kept so, as the water may not stay too long in the spring, till the weeds and sedge be grown up. Bacon.

Men suffer their private judgment to be drawn into the common *sewer* or stream of the present vogue.

King Charles.

As one who long in populous city pent,  
Where houses thick, and *sewers* annoy the air,  
Forth issuing on a summer's morn to breathe  
Among the pleasant villages and farms  
Adjoined from each thing met conceives delight.

Milton.

SEWERS, COMMON, in ancient Rome, were executed at a great expense. It was proposed that they should be of sufficient dimensions to admit a wagon loaded with hay. When these common sewers came to be obstructed, or out of repair, under the republic, the censors contracted to pay 1000 talents, or about £193,000 for clearing and repairing them. They were again in disrepair at the accession of Augustus, and the reinstating them is mentioned among the great works of Agrippa. He is said to have turned the course of seven rivers into these subterraneous passages, to have made them navigable, and to have actually passed in barges under the streets and buildings of Rome. These works are still supposed to remain; but, as they exceed the power and resources of the present city to keep them in repair, they are quite concealed, except at one or two places. They were, in the midst of the Roman greatness, and still are, reckoned among the wonders of the world; and yet they are said to have been works of Tarquin I., a prince whose territory did not extend, in any direction, above sixteen miles; and, on this supposition, they must have been made to accommodate a city that was calculated chiefly for the reception of cattle, herdsmen, and banditti. Rude nations sometimes execute works of great magnificence, as fortresses and temples, for the purposes of war and superstition; but seldom palaces, and still more seldom works of mere convenience and cleanliness, in which for the most part they are long defective. It is not unreasonable, therefore, to question the authority of tradition in respect of this singular monument of antiquity, which so greatly exceeds what the best accommodated city of modern Europe could undertake: and as those works are still entire, and may continue so for thousands of years, it has been suspected that they were even prior to the settlement of Romulus, and may have been the remains of a more ancient city, on the ruins of which the followers of Romulus settled, as the Arabs now encamp on the ruins of Palmyra and Balbeck. Livy owns that the common sewers were not accommodated to the plan of Rome, as it was laid out in his time; they were carried in directions across the streets, and passed under buildings of the greatest antiquity. This derangement indeed he imputes to the hasty rebuilding of the city after its destruction by the Gauls; but haste, it is probable, would have determined the people to build on their old foundations, or at least not to change them so much as to cross the direction of former streets.

SEWERS, COURT OF COMMISSIONERS OF, a temporary tribunal in England, erected by virtue of a commission under the great seal; which formerly used to be granted pro re nata at the pleasure of the crown, but now at the discretion and nomination of the lord chancellor, lord trea-

surer, and chief justices, pursuant to the statute 23 Hen. VIII. c. 5. Their jurisdiction is to overlook the repairs of sea-banks and sea-walls and the cleansing of rivers, public streams, ditches, and other conduits, whereby any waters are carried off; and is confined to such county or particular district as the commission shall expressly name. The commissioners are a court of record, and may fine and imprison for contempts; and in the execution of their duty may proceed by jury, or upon their own view, and may take order for the removal of any annoyances, or the safeguard and conservation of the sewers within their commission, either according to the laws and customs of Romney-marsch, or otherwise at their own discretion. They may also assess such rates or scots upon the owners of lands within their district as they shall judge necessary; and, if any person refuse to pay them, the commissioners may levy the same by distress of his goods and chattels; or they may, by statute 23 Hen. VIII. c. 5, sell his freehold lands (and by the 7 Ann. c. 10, his copyhold also), in order to pay such scots or assessments. But their conduct is under the control of the court of king's-bench, which will prevent or punish any illegal or tyrannical proceedings. And yet in the reign of king James I. (8th of November 1616) the privy council took upon them to order that no action or complaint should be prosecuted against the commissioners unless before that board; and committed several to prison who had brought such actions at common law, till they should release the same: and one of the reasons for discharging Sir Edward Coke from his office of lord chief justice was for countenancing those legal proceedings. The pretence for these arbitrary measures was no other than the tyrant's plea for the necessity of unlimited powers in works of evident utility to the public—'the supreme reason above all reasons, which is the salvation of the king's lands and people.' But now it is clearly held that this (as well as all other inferior jurisdictions) is subject to the discretionary coercion of his majesty's court of king's-bench.

**SEX**, n. s. Fr. *seize*; Lat. *serus*. The property by which any animal is male or female.

These two great *sexes* animate the world. *Milton.*

Under his forming hands a creature grew,

Manlike, but different *sex*. *Id.*

Shame is hard to be overcome; but, if the *sex* once get the better of it, it gives them afterwards no more trouble. *Garth.*

**SEXACESSES**, in Roman antiquity, a coin valued at sixty asses.

**SEXAGENARY**, or **SEXAGESIMAL ARITHMETIC**, is a method of computation proceeding by sixties; such is that used in the division of a degree into sixty minutes, of the minute into sixty seconds, of the second into sixty thirds, &c.

**SEXAGENARY TABLES** are tables of proportional parts, showing the product of two sexagesimaries that are to be multiplied, or the quotient of the two that are to be divided.

**SEXAGESIMA** is the Sunday next to Shrove Sunday, so called as being about the sixtieth day before Easter.

**SEXAGESIMALS**, or **SEXAGESIMAL FRA-**

**TIONS**, fractions whose denominators proceed in a sexagecuple ratio; that is a prime, or the first minute,  $= \frac{1}{60}$ ; a second  $= \frac{1}{3600}$ ; a third  $= \frac{1}{21600}$ . Anciently there were no other than sexagesimals used in astronomy; and they are still retained in many cases, though decimal arithmetic begins to grow in use now in astronomical calculation. In these fractions, the denominator being always 60, or a multiple thereof, is usually omitted, and the numerator only written down: thus,  $4^{\circ} 59' 32'' 40'''$ , 16<sup>th</sup>, is to be read, 4 degrees, 59 minutes, 32 seconds, 40 thirds, 16 fourths, &c.

**SEXANGED**, adj. { From Lat. *sex* and

**SEXANGULAR**. } *angulus*. Having six corners or angles; hexagonal.

The grubs from their *sexangular* abode  
Crawl out unfinished like the maggot's brood.

*Dryden.*

**SEXTANS**, **SEXTANT**, a sixth part of certain things. The Romans having divided their *as* into twelve unciae or ounces, the sixth part of that, or two ounces, was the sextans.

**SEXTANS** was also a measure which contained two ounces of liquor, or two cyathi.

**SEXTANS**, in astronomy, a constellation of the southern hemisphere, made by Hevelius out of unformed stars. See **ASTRONOMY**.

**SEXTANT**, in mathematics, denotes an arch comprehending  $60^\circ$ .

**SEXTANT** is also particularly used for an astronomical instrument made like a quadrant, excepting that its limb only comprehends  $60^\circ$ . The use and application of the sextant is the same with that of the quadrant. See **QUADRANT**, and **NAVIGATION**.

**SEXTILE AQUÆ**, an ancient town of Gallia Cisalpina, built by Caius Sextius, a lieutenant of Julius Caesar, famous for its hot and cold baths. The Cimbri were defeated near it by Marius. (Liv. 61, Vel. Pat. 1. c. 15). It is now called Aix.

**SEXTILE**, adj. Lat. *sextilis*. In such a position or aspect of two planets, when at  $60^\circ$  distance, or at the distance of two signs from one another, marked thus \*.

Planetary motions and aspects,  
In *sextile*, square, and trine. *Milton.*

The moon receives the dusky light we discern in its *sextile* aspect from the earth's benignity. *Caraville.*

**SEXTILE TWICE**, or **BIS-SEXTILE**, in chronology, the name given by the Romans to the intercalary day which followed the sixth of the kalends of March every leap-year, which is hence still called bissextile.

**SEXTILIS** (Lat. i. e. the sixth month, from March), in chronology, the name given by the Romans to the month of August, during the whole time of the kingdom and republic, and until the reign of the emperor Augustus, when it was changed in compliment to him, as Quintilis had been previously changed to July in honor of his uncle Julius Cæsar. See **ROME**.

**SEXTIUS** (Quintus), a Pythagorean philosopher, who flourished under Augustus. He seemed formed to rise in the republic; but he shrunk from civil honors, and declined accepting the rank of senator when it was offered him by

Julius Cæsar, that he might have time to apply to philosophy. It appears that he wished to establish a school at Rome, and that his tenets, though chiefly drawn from the doctrines of Pythagoras, in some particulars resembled those of the Stoics. His laws were tinctured with great severity; and, in an early period of his establishment, he found his mind so harassed, and the harshness of the doctrines which he wished to establish so repulsive to his feelings, that he nearly worked himself up to such a height of desperation, as to put a period to his existence. Of the school of Sextius were Fabianus, Sotion, Flavianus, Crassitius, and Celsus. Of his works only a few fragments remain; and whether any of them formed a part of the work which Seneca admired so much cannot now be determined. Some of his maxims are valuable. He recommended an examination of the actions of the day to his scholars when they retired to rest; he taught that the road to heaven (*ad astra*) was by frugality, temperance, and fortitude. He used to recommend holding a looking-glass before persons disordered with passion. He enjoined his scholars to abstain from animal food.

**SENTON, n. s.** Corrupted from sacristan. An under officer of the church, whose business is to dig graves.

A stool and cushion for the sexton. *Shakspeare.*

When any dies then, by tolling a bell or bespeaking a grave of the sexton, the same is known to the searchers corresponding with the said sexton.

*Graunt.*

They may get a dispensation to hold the clerkship and *sextonship* of their own parish in commendam. *Swejt.*

SEXTON is thus called by corruption of the Latin *sacrista*, or Saxon *segerstone*, which denotes the same. His office is to take care of the vessels, vestments, &c., belonging to the church; and to attend the minister, church-warden, &c., at church. He is usually chosen by the parson only. Sextons, as well as parish-clerks, are regarded by the common law as persons who have freehold in their offices; and therefore, though they may be punished, yet they cannot be deprived, by ecclesiastical censures. The office of sexton in the pope's chapel is appropriated to the order of the hermits of St. Augustine. He is generally a bishop, though sometimes the pope only gives a bishopric in partibus to him on whom he confers the post. He takes the title of Prefect of the pope's Sacristy, and has the keeping of the vessels of gold and silver, the reliques, &c. When the pope says mass, the sexton always tastes the bread and wine first. If it be in private he says mass, his holiness, of two wafers, gives him one to eat; and, if in public, the cardinal, who assists the pope in quality of deacon, of three wafers, gives him two to eat. When the pope is desperately sick, he administers to him the sacrament of extreme unction, &c., and enters the conclave in quality of first conclavist. The office of a sexton in Sweden is somewhat singular. During M. Outhier's stay at Stockholm, in 1736, he visited the church of St. Clara, and during divine service he observed a sexton going about with a long rod, waking those persons who had fallen asleep.

**SEXTUPLE, adj.** Lat. *sextuplus*. Six fold; six times told.

Man's length, being a perpendicular from the vertex unto the sole of the foot, is *sextuple* unto his breadth, or a right line drawn from the ribs of one side to another. *Browne.*

**SEXTUPLE**, in music, denotes a mixed sort of triple, which is beaten into double time.

**SEXTUS**, a Stoic philosopher, born at Chæronea in Boeotia, and said to be nephew of Plutarch. He was preceptor to the emperors Marcus Aurelius and Lucius Verus.

**SEXTUS EMPIRICUS**, a famous Pyrrhonian philosopher, who lived in the second century, under Antoninus. He was a physician of the sect of the Empirics, and is said to have been one of the preceptors of Antoninus the philosopher. There are still extant his Pyrrhonian Institutions, and a large work against the mathematicians, &c. The best edition of Sextus Empiricus is that of Fabricius in Greek and Latin, printed at Leipsic in 1718, folio.

**SEXTUS POMPELIUS FESTUS.** See FESTUS.

**SEXTUS TARQUINIUS**, one of the sons of Tarquin II., the last king of Rome;—whose unbridled lust occasioned the suicide of Lucretia, and the consequent revolution of Rome, by the abolition of the monarchy, and the erection of the Roman republic. See ROME.

**SEXUAL SYSTEM**, the beautiful system of botany discovered and arranged by Linnaeus. See BOTANY, Index.

**SEXUALISTE** (Sexualists), among botanical writers, those who have established the classes of plants upon the differences of the sexes and parts of fructification in plants, according to the modern method; as Linnaeus, &c.

**SEYDLER SALT**, or **SEDLITZ SALT**, names given to Epsom salt (see MINERAL WATERS); now named, with more propriety, sulphate of magnesia.

**SEZAWUL** [Hindoo], in Bengal, an officer employed occasionally to collect the revenue, and enforce payment.

**SFORZA** (James), the founder of the illustrious house of Sforza, which acted so conspicuous a part in Italy during the fifteenth and sixteenth centuries, which gave six dukes to Milan, and contracted alliances with almost every sovereign in Europe. James Sforza was born on the 28th of May, 1369, at Catignola, a small town in Italy, between Imola and Faenza. His father was a day-laborer, or, according to Commynes, a shoemaker. A company of soldiers happening one day to pass through Catignola, he was seized with the desire of accompanying them to the wars. ‘I will go,’ said he to himself, ‘and dart my hatchet against that tree; and, if it stick fast in the wood, I will immediately become a soldier.’ The hatchet accordingly stuck fast, and our adventurer enlisted; and because, says the abbé de Choisi, he had thrown the axe with all his force, he assumed the name of Sforza; for his true name was Giacomuzzo or James Attendulo. He rose rapidly in the army, and soon became commander of 7000 men. He defended the cause of Jane II. queen of Naples for many years, and was made constable of her kingdom. He was created

count of Catignola by pope John XXII. by way of paying a debt of 14,000 ducats, which the church of Rome owed him. His exploits became every day more illustrious; he obliged Alphonso king of Arragon to raise the siege of Naples; and reduced several places that had revolted in Abruzzo and Le Labour; but while in pursuit of his enemies he was unfortunately drowned in the river Aterno on the 3d of January, 1424, at the age of fifty-four years. In his youth he fell in love with a woman called Lucia Trezana, whom he married, after she had borne him several children. He married afterwards Antoinette Salembini, who brought him several excellent estates; she bore him Bosio Sforza, comte of Santa-Flor, a warrior and governor of Orvietta for pope Martin V. His third wife was Catharine Alopa, sister of Rodolpho, grand chamberlain to the sovereign of Naples. His last wife was Mary Marzana, daughter to the duke of Sessa. She bore him Charles Sforza, who was general of the order of Augustines, and archbishop of Milan.

SFORZA (Francis), the son of James Sforza, by Lucia Trezana, was born in 1401, and trained up by his father to the profession of arms. At the age of twenty-three he defeated the troops of Braccio, who disputed with him the passage of the Aterno. In this action his father was drowned, and Francis, though illegitimate, succeeded him. He fought successfully against the Spaniards, and contributed a great deal both towards raising the siege of Naples, and to the victory which was gained over the troops of Braccio near Aquila, in 1425, where that general was killed. After the death of queen Jane, in 1435, he espoused the interests of the duke of Anjou, to whom she had left her crown, and by his courage and abilities ably supported that unfortunate prince. He made himself master of several places in Ancona, from which he was driven by pope Eugenius IV., who defeated and excommunicated him; but he soon re-established his affairs by a victory. His reputation was now so great that the pope, the Venetians, and the Florentines, chose him for their general against the duke of Milan. Sforza had already conducted Venetian armies against that prince, though he had espoused his daughter. The duke dying, in 1447, the inhabitants of Milan invited Sforza, his son-in-law, to lead them against that duke. But, after some exertions in their favor, he turned his arms against themselves, laid siege to Milan, and obliged them to receive him as duke, notwithstanding the rights of Charles duke of Orleans, the son of Valentine of Milan. In 1461 Louis XI., who hated Orleans, gave up to Sforza the rights which the crown of France had over Genoa, and even put into his hands Savona, a town belonging to that republic. The duke of Milan soon after made himself master of Genoa. He died in 1466, with the reputation of a man who was willing to sell his blood to the best purchaser, and who was not too scrupulous an observer of his word. His second wife was Blanche Marie, natural daughter of Philip Marie duke of Milan. She bore him Galeas Marie, and Ludovic Marie, dukes of Milan, Philip Marie count of Pavia, Sforza Marie

duke of Bari, Ascanius Marie bishop of Pavia and Cremona, and a cardinal. He was taken prisoner by the troops of Louis XII., and confined for some time in the tower of Bourges. He was a cunning man, and deceived cardinal d'Amboise when that prelate aspired at the papacy. His daughters were Hyppolita, married to Alphonso of Arragon, afterwards king of Naples, and Elizabeth, married to William marquis of Montferrat. He had also several natural children.

SHAB'BY, *adj.* { Belg. *schaben*. A word

SHAW'RINESS, *n. s.* { that has crept into conversation and low writing, but ought not to be admitted into the language, says Johnson. Mean; pauly : the noun substantive corresponding.

He exchanged his gay *shabbiness* of clothes, fit for a much younger man, to warm ones that would be decent for a much older one. *Spectator*.

The dean was so *shabby*, and looked like a ninnay, That the captain supposed he was curate to Jenny. *Swift*.

SHACK, in ancient customs, a liberty of winter-pasturage. In the counties of Norfolk and Suffolk the lord of the manor has shack, i. e. a liberty of feeding his sheep at pleasure in his tenants' lands during the six winter months. In Norfolk, shack also extends to the common for hogs, in all men's grounds, from the end of harvest till seed-time. Whence to go a-shack, is to feed at large.

SHAC'KLE, *v. a. & n. s.* Belg. *schaeckelen*. To chain ; to fetter ; to bind : the noun substantive corresponding.

Himself he frees by secret means unseen,  
 His *shackles* empty left, himself escaped clean.  
*Faerie Quee*.

It is great,  
 To do that thing that ends all other deeds ;  
 Which *shackles* accidents, and bolts up change.  
*Shakespeare*.

The forge in fetters only is employed ;  
 Our iron mines exhausted and destroyed  
 In *shackles*. *Dryden's Juvenal*.

You must not *shackle* and tie him up with rules  
 about indifferent matters. *Locke*.

So the stretched cord the *shackled* dancor tries,  
 As prone to fall as impotent to rise. *Smith*.

A servant commonly is less free in mind than in condition ; his very will seems to be in bonds and *shackles*, and desire itself under durance and captivity. *South*.

No trivial price  
 Should set him free, or small should be my praise  
 To lead him *shackled*. *Philip*.

SHACKLES, aboard a ship, are those oblong iron rings, bigger at one end than at the other, with which the ports are shut fast, by thrusting the wooden bar of the port through them. There is also a sort of shackles to lift the hatches up with, of a like figure, but smaller. They are fastened at the corners of the hatches.

SHAD, a large species of herring (*clupea*), which inhabits the sea near the mouths of large rivers, and in the spring ascends them for the purpose of depositing its spawn in the shallow water about their sources. The young fry remain for a season in the waters which gave them birth, but on the approach of cold weather descend the rivers, and take refuge in the ocean.

The old ones likewise return, and at this time are emaciated and unfit for food. The form of the shad is the same as that of the other herrings, very much compressed, with the abdomen gradually becoming thinner, and forming a serrated edge; and, like them, the bones are much more numerous and more slender than in other fish. The shad which frequents the waters of America has not been accurately compared with the European, but is probably a different species. It usually weighs four or five pounds, but sometimes twelve: the scales are easily detached, when a row of dark spots is exposed on each side. It is found in all the rivers of the Atlantic coast, is highly esteemed for food, and is consumed in great quantities, in the fresh state, in some American cities. During the season they are an important source of wealth to the inhabitants of the borders of the Hudson, Delaware, and Chesapeake. Great quantities are salted, but are less esteemed than when eaten fresh.

**SHADDOCK**, a large species of orange, attaining the diameter of seven or eight inches, with a white, thick, spongy and bitter rind, and a red or white pulp, of a sweet taste, mingled with acidity. It is a native of China and Japan, and was brought to the West Indies by a Captain Shaddock, from whom it has derived its name. It is often called *pampelmoes*. See ORANGE.

**SHADE**, *n.s. & v.a.* Sax. *readu*; Belg. *schaduw*, *n.s.*

**SHAD'OW**, *n.s.* { *schade*; Teut. *schatten*.

**SHAD'OWY**, *adj.* { The darkness caused

**SHA'DY**, by an interception of light; obscurity; an obscure or retired place; coolness made by the interception of light; screen; shelter; the darker parts of a picture; a gradation of light; the dark outline of a body, formed by its being placed between any surface and the light; the soul, considered as separate from the body: to shade is to cover from light or heat; shelter; protect; mark the gradations of light: shadow is synonymous with shade in most of its senses, but is more commonly used for the representation of a body which intercepts the light; an imperfect or faint representation of any kind; an inseparable companion or follower; a typical or mystical representation: the verb and adjective strictly corresponding with shade, noun substantive: shady expressing an abundance of shade.

A *shadow* is a diminution of the first and second light. The first light is that which proceeds immediately from a lightened body, as the beams of the sun. The second is an accidental light, spreading itself into the air, or medium, proceeding from the other. *Shadows* are threefold: the first is a single shadow, and the least of all: and is proper to the plain surface, where it is not wholly possessed of the light. The second is the double shadow, and it is used when the surface begins once to forsake your eye as in columns. The third shadow is made by crossing over your double shadow again, which darkeneth by a third part. It is used for the inmost shadow, and farthest from the light, as in gulls, wells, and caves.

*Peacham.*

Turnsoil is made of old linen rags dried, and laid in a saucer of vinegar, and set over a chafing-dish of coals, till it boil; then wring it into a shell, and put

it into a little gum arabick: it is good to *shadow* carnations and all yellows.

*Id.*

The wakeful bird

Sings darkling, and in *shadiest* covert hid  
Tunes her nocturnal note. *Milton's Paradise Lost.*

Then to the desert takes his night;  
Where still from *shade* to *shade* the Son of God,  
After forty days fasting, had remained. *Milton.*

Leave not the faithful side  
That gave thee being, still *shades* thee and protects.

*Id.*

The portal shone, imitable on earth  
By model, or by *shadow* pencil drawn.

*Id.*

If substance might be call'd that *shadow* seemed.

*Id.*

Without the least impulse or *shadow* of fate. *Id.*

Thou my *shadow*

*Id.*

Inseparable must with me be long.  
Types and *shadows* of that destined seed.

*Id.*

Whereat I waked, and found  
Before mine eyes all real, as the dream  
Had lively *shadowed*. *Id. Paradise Lost.*

More pleasant light

*Milton.*

Shadowy sets off the face of things.  
The weaker light unwillingly declined,

And to prevailing *shades* the murmuring world resigned.

*Roscommon.*

By the revolution of the skies

Night's sable *shadows* from the ocean rise. *Denham.*

Amongst the creatures are particular excellencies scattered, which are some *shadows* of the divine perfections.

*Tillotson.*

Stretched at ease you sing your happy loves,  
And Amaryllis fills the *shady* groves. *Dryden.*

And, after these, came armed with spear and shield

An host so great as covered all the field;  
And all their foreheads, like the knights before,  
With laurels ever green were shaded o'er. *Id.*

'Tis every painter's art to hide from sight,  
And cast in *shades*, what seen would not delight.

*Id.*

To Tranchin, swift as thought, the fitting *shade*  
Thro' air his momentary journey made. *Id.*

To the secret *shadows* I retire,  
To pay my penance till my years expire. *Id.*

After great lights there must be great *shadows*. *Id.*

If the parts be too much distant, so that there be void spaces which are deeply *shadowed*, then place in those voids some fold, to make a joining of the parts.

*Id. Dufresnoy.*

Augustus is *shadowed* in the person of Æneas *Dryden.*

White, red, yellow, blue, with their several degrees or *shades* and mixtures, as green, come in only by the eyes. *Locke.*

The body, though it moves, yet not changing perceptible distance with some other bodies, the thing seems to stand still, as in the hands of clocks, and *shadows* of sun-dials. *Id.*

From a round globe of any uniform color, the idea imprinted on our minds is of a flat circle, variously *shadowed* with different degrees of light coming to our eyes. *Id.*

His countrymen probably lived within the sheke of the earthquake, and *shadow* of the eclipse. *Addison.*

Milton has brought into his poems two actors of a *shadowy* and fictitious nature, in the persons of sin and death; by which he hath interwoven in his fable a very beautiful allegory. *Id.*

The shield being to defend the body from weapons, *et* *shadows* out to us the continence of the empe-

*K*

•or, which made him proof to all the attacks of pleasure.  
*Id.*

With shadowy verdure flourished high,  
A sudden youth the groves enjoy. *Fenton.*

In Brazil are trees which 'll those that sit under  
their shade in a few hours. *Arbuthnot.*

Ne'er to these chambers, where the mighty rest,  
Since their foundation came a nobler guest :

Nor e'er was to the bowers of bliss conveyed  
A fairer spirit or more welcome shade. *Tickell.*

Envy will merit, as its shade, pursue. *Pope.*

Sing, while beside the shaded tomb I mourn,  
And with fresh bays her rural shrine adorn. *Id.*

Let the arched knife,  
Well sharpened, now assail the spreading shades  
Of vegetables, and their thirsty limbs dissever. *Philipps.*

**SHADOW**, in optics, is a privation or diminution of light by the interposition of an opaque body ; or it is a plane where the light is either altogether obstructed, or greatly weakened, by the interposition of some opaque body between it and the luminary.

**SHADOW**, in painting, is an imitation of a real shadow, effected by gradually heightening and darkening the colors of such figures as by their dispositions cannot receive any direct rays from the luminary that is supposed to enlighten the piece.

**SHADOW**, in perspective, the appearance of an opaque body, and a luminous one, whose rays diverge (e. gr. a candle, lamp, &c.), being given, to find the just appearance of the shadow, according to the laws of perspective. The method is this :—From the luminous body, which is here considered as a point, let fall a perpendicular to the perspective plane or table ; i. e. find the appearance of a point upon which perpendicular, drawn from the middle of the luminary, falls on the perspective plane ; and from the several angles, or raised points of the body, let fall perpendiculars to the plane. These points, whereon the perpendiculars fall, connect by right lines with the point upon which the perpendicular let fall from the luminary falls ; and continues the lines to the side opposite to the luminary. Lastly, through the raised points, draw lines through the centre of the luminary, intersecting the former ; the points of intersection are the terms or bounds of the shadow.

**SHADOWS**, colored, a curious optical phenomenon, which was observed, a considerable number of years ago, by professor Scherzer of Vienna, and more lately by count Rumford. The count made the discovery when prosecuting his experiments upon light : of which the reader will find some account under PHOTOMETER. ‘Desirous,’ says he, ‘of comparing the intensity of the light of a clear blue sky by day with that of a common wax-candle, I darkened my room, and letting the day-light from the north, coming through a hole near the top of the window-shutter, fall at an angle of about  $70^{\circ}$  upon a sheet of very fine white paper, I placed a burning wax-candle in such a position that its rays fell upon the same paper, and, as near as I could guess, in the line of reflection of the rays of day-light from without ; when, interposing a cylinder of wood, about half an inch in diameter, before the centre of the paper, and at the distance of about

two inches from its surface, I was much surprised to find that the two shadows projected by the cylinder upon the paper, instead of being merely shades without color, as I expected ; the one of them, that which, corresponding with the beam of day-light, was illuminated by the light of the most beautiful blue that is possible to imagine. This appearance, which was not only unexpected, but was really in itself in the highest degree striking and beautiful, I found upon repeated trials, and after varying the experiment in every way I could think of, to be so perfectly permanent, that it is absolutely impossible to produce two shadows at the same time, from the same body, the one answering to a beam of daylight, and the other to the light of a candle or lamp, without these shadows being colored, the one yellow, and the other blue. If the candle be brought nearer to the paper, the blue shadow will become of a deeper hue and the yellow shadow will gradually grow fainter ; but, if it be removed farther off, the yellow shadow will become of a deeper color, and the blue shadow will become fainter ; and, the candle remaining stationary in the same place, the same varieties in the strength of the tints of the colored shadows may be produced merely by opening the window-shutter a little more or less, and rendering the illumination of the paper, by the light from without, stronger or weaker. By either of these means, the colored shadows may be made to pass through all the gradations of shade, from the deepest to the lightest, and vice versa ; and it is very amusing to see shadows thus glowing with all the brilliancy of the purest and most intense prismatic colors, then passing suddenly all the varieties of shade, preserving in all the most perfect purity of tint, growing stronger and fainter, and vanishing and returning, at command.’ \*

**SHADRACH, MESHACH, AND ABEDNEGO**, names given by the prince of the Babylonian eunuchs to the three captive Jewish princes, Hananiah, Mishael, and Azariah, the companions of Daniel. Their temperance, wisdom, and promotion along with Daniel ; their heroic refusal to worship Nebuchadnezzar’s golden image ; and their miraculous deliverance from the fiery furnace, with the appearance of the Messiah, the destruction of their enemies, and subsequent promotion over the province, are recorded in Daniel, ch. i. and iii.

**SHADWELL** (Thomas), an English poet, descended of an ancient family in Staffordshire, born in 1640, and educated at Caius College, Cambridge. He then was placed in the Middle Temple to study the law ; where having spent some time, he travelled abroad. Upon his return home he became acquainted with the most celebrated persons of wit in that age. He applied himself chiefly to dramatic writing, in which he had great success ; and upon the Revolution was made poet laureat and historiographer to William and Mary, in the room of Mr. Dryden. These employments he enjoyed till his death, in 1692. The chief of his poetical pieces are his congratulatory poem on the prince of Orange’s coming to England ; another on queen Mary ; his translation of Juvenal’s tenth satire, &c. Mr.

Dryden treats him with great contempt, in his satire called Mac-Fleckno. The best judges of that age, however, gave their testimony in favor of his comedies; which have in them fine strokes of humor; the characters are often original, strongly marked, and well sustained. An edition of his works, with his life prefixed, was published in 1720, in 4 vols. 8vo.

SHADWELL (Charles), the younger son of the poet, according to Chetwood, or his nephew, as Jacob has it, turned out a dramatic writer of considerable talents in Ireland. He wrote a good number of plays, but the piece he is most famed for is *The Fair Quaker of Deal*. He died in 1726.

SHAFT, n. s. Sax. *rceapt*. An arrow; a missive weapon; a narrow, deep pit.

To pierce pursuing shield,  
By parents trained, the Tartars wild are taught,  
With shafts shot out from their back-turned bow.

Sidney.  
They sink a shaft or pit of six foot in length.

Carew.

Practise to draw small and easy things, as a cherry with the leaf, the shaft of a steeple.

Peacham.

Who, in the spring, from the new sun  
Already has a fever got,

Too late begins those shafts to shun  
Which Phœbus through his veins has shot. Waller.

They are both the archer and shaft taking aim afar off, and then shooting themselves directly upon the desired mark.

More.

So lofty was the pile, a Parthian bow  
With vigour drawn must send the shaft below.

Dryden.

The fulminating damp, upon its ascension, gives a crack like the report of a gun, and makes an explosion so forcible as to kill the miners, and force bodies of great weight from the bottom of the pit up through the shaft.

Woodward.

Suppose a tube, or, as the miners call it, a shaft were sunk from the surface of the earth to the center.

Arbuthnot.

SHAFT, in mining. In the tin-mines, after this is sunk about a fathom, they leave a little, long, square place, which is called a shamble. Shafts are sunk some ten, some twenty fathoms, deep into the earth, more or less. Of these shafts there is the landing or working shaft, where they bring up the work or ore to the surface; but, if it be worked by a horse engine or whim, it is called a whim shaft; and, where the water is drawn out of the mine, it is indifferently named an engine-shaft, or the rod shaft. See MINE.

SHAFT, in ornithology. See TROCHILUS.

SHAFT OF A COLUMN, in building, is the body thereof between the base and capital; so called from its straightness. See ARCHITECTURE.

SHAFTESBURY, a borough and market-town, in Redland hundred, Sherborne division, Dorset, situate on a high hill, ten miles north from Blandford, and 101 W. S. W. from London. It is supposed by Camden to have been founded by Alfred; and is recorded to have been a populous city, and to have had twelve churches before the conquest: four only of which now remain; viz. St. Peter's, the Holy Trinity, St. James's, and St. Rumbold's, of which St. Peter's is the principal. This place sends one member to the imperial parliament. Here

are also meeting-houses, a free-school, and two alms-houses. In the corn market is a neat town-hall, in which the quarter sessions are held. Water is so scarce here that the inhabitants used to be supplied with it from Melcomb, an adjacent village. Latterly, two deep wells have been dug which afford plenty of good water.

SHAG, n. s. } Saxon *rceacga*. Rough

SHAG'GED, adj. } woolly hair; rough; rug-

SHAG'GY, adj. } ged.

Where is your husband?  
He's a traitor.

—Thou lyest, thou shag-eared villain! *Shakspeare*.

They plucked the seated hills with all their load,  
Rocks, waters, woods; and by the shaggy tops  
Uplifting, bore them in their hands.

*Milton's Paradise Lost*.

There, where very desolation dwells,  
By grots and caverns shagged with horrid shade,  
She may pass on with unblemished majesty,  
Be it not done in pride.

*Milton*.

They change their hue, with haggard eyes they stare,  
Lean are their looks, and shagged is their hair.

*Dryden*.

A lion's hide he wears;  
About his shoulders hangs the shaggy skin,

*ll.*

The teeth and gaping jaws severely grin.  
From the shag of his body, the shape of his legs, his having little or no tail, the slowness of his gait, and his climbing up of trees, he seems to come near the bear kind.

*Grew*.

How would the old king smile  
To see you weigh the paws when tip with gold,  
And throw the shaggy spoils about your shoulders.

*Addison*.

True Witney broad cloth, with its shag unshorn,  
Be this the horseman's fence.

*Gay*.

Ye rugged rocks! which holy knees have worn;  
Ye grots and caverns shagged with horrid thorn!

*Pope*.

From the frosty north,  
The early valiant Swede draws forth his wings

*ll.*

In battailous array, while Volga's stream  
Sends opposite, in shaggy armour clad,

*ll.*

Her borderers, on mutual slaughter bent.

*Philipps*.

As yet black breeches were not; satin smooth,  
Or velvet soft, or plush with shaggy pile.

*Couper*.

SHAG, n. s. Lat. *phalacrocorax*. A seabird.

Among the first sort we reckon shags, duck, and mallard.

*Carew*.

SHAGREEN, or CHAGREEN, in commerce, a kind of grained leather prepared of the skin of a species of *squalus*, much used in covering cases, books, &c. Shagreen is also made of the skin of the onager, or wild ass, as well as of horses; of the part that covers the rump. There are great manufactures of it at Astracan, and in all Persia.

Professor Pallas says that no accurate account of the method of preparing shagreen has ever been published in Europe previous to his own; of which we now give an abridgment:—‘ All kinds of horses or asses skin, which have been dressed so as to appear grained, are, by the Tartars, called sauwer, by the Persians sogre, and by the Turks sagri, from which the Europeans have made shagreen or chagrin. The Tartars who reside at Astracan, with a few of the Armenians of that city, are the only people in the Russian empire acquainted with the art of mak-

ing shagreen. Those who follow this occupation not only gain considerable profit by the sale of their production to the Tartars of Cuban, Astracan, and Casan, who ornament with it their Turkey leather boots, slippers, and other articles made of leather, but they derive considerable advantage from the great sale of horses' hides, which have undergone no other process than that of being scraped clean, and of which several thousands are annually exported, at the rate of from seventy-five to eighty-five roubles per 100, to Persia, where there is a scarcity of such hides, and from which the greater part of the shagreen manufactured in that country is prepared. The hind part only of the hide, however, which is cut out in the form of a crescent about a Russian ell and a half in length across the loins, and a short ell in breadth along the back, can properly be employed for shagreen. The remaining part is improper for that purpose, and is therefore rejected. The preparation of the skins, after being cut into the above form, is as follows:—They are deposited in a tub filled with pure water, and suffered to remain there for several days, till they are thoroughly soaked, and the hair has dropped off. They are then taken from the tub, one by one, extended on boards placed in an oblique direction against a wall, the corners of them, which reach beyond the edges of the board, being made fast, and the hair with the epidermis is then scraped off with a blunt iron scraper called urak. The skins thus cleaned are again put in pure water to soak. They are then taken from the water a second time, spread out as before, and carefully scraped on both sides. They then take frames, made of a straight and a semicircular piece of wood, having nearly the same form as the skins. On these the skins are extended in as even a manner as possible by cords; and, while extending them, they are several times besprinkled with water, again moistened, and carried into the house, where the frames are deposited close to each other on the floor with the flesh side next the ground. The upper side is then thickly besmeared with the black, smooth, and hard seeds of a kind of goose foot, (*chenopodium album*), and, that they may make a strong impression on the skins, a piece of felt is spread over them, and the seeds are trod down with the feet, and thus deeply imprinted into the soft skins. The frames, without shaking the seeds, are then carried out into the open air, and placed in a reclining position against a wall to dry. In this state the skins are left several days to dry in the sun, until no moisture is observed in them, when they are fit to be taken from the frames. When the impressed seeds are beat off from the hair side, it appears full of indentations or inequalities, and has acquired that impression which produces the grain of the shagreen. The operation of smoothing is performed on an inclined bench or board, which is furnished with an iron hook, and is covered with thick felt of sheep's wool, on which the dry skin may gently rest. The skin is suspended in the middle of the bench to its iron hook, by one of the holes made in the edge of the skin for extending it in its frame as before mentioned; and a cord, having

at its extremity a weight, is attached to each end of the skin, to keep it in its position while under the hands of the workman. It is then smoothed and scraped by two different instruments. The first is a piece of sharp iron bent like a hook, with which the surface is pretty closely scraped to remove all the projecting inequalities. This operation, from the hardness of the skin, is attended with difficulty; and great caution is required that too much of the impression of the alabuta seed be not destroyed. After all these operations, the shagreen is again put into water, partly to make it pliable, and partly to raise the grain. As the seeds occasion indentations in the surface of the skin, the intermediate spaces, by the operations of smoothing and scraping, lose some part of their projecting substance; but the parts which have been depressed, and which have lost none of their substance, now swell up above the scraped parts, and thus form the grain of the shagreen. To produce this effect the skins are left to soak in water for twenty-four hours; after which they are immersed several times in a strong warm ley, obtained by boiling from a strong alkaline earth named schora, which is found in great abundance in the neighbourhood of Astracan. When the skins have been taken from this ley they are piled up, while warm, on each other and suffered to remain in that state several hours; by which means they swell and become soft. They are then left twenty-four hours in a moderately strong pickle of common salt, which renders them exceedingly white and beautiful, and fit for receiving any color. The color most usual for these skins is a sea-green; but old experienced workmen can dye them blue, red, or black, and even make white shagreen. For the green color nothing is necessary but filings of copper and sal ammoniac. Sal ammoniac is dissolved in water till the water is completely saturated; and the shagreen skins, still moist, after being taken from the pickle, are washed over with the solution on the ungrained flesh side, and, when well moistened, a thick layer of copper filings is strewed over them: the skins are then folded double, so that the side covered with the filings is innermost. Each skin is then rolled up in a piece of felt; the rolls are all ranged together in proper order, and they are pressed down by some heavy bodies placed over them, under which they remain twenty-four hours, after which the skins are spread out and dried. For the blue dye indigo is used. About two pounds of it, reduced to a fine powder, are put into a kettle: cold water is poured over it, and the mixture is stirred round till the color begins to be dissolved; five pounds of pounded alakar, which is a kind of barilla or crude soda, are then dissolved in it, with two pounds of lime and one pound of pure honey, and the whole is kept several days in the sun, and often stirred round. The skins intended to be dyed blue must be moistened only in the nitrous ley schora, but not in the salt brine. When still moist they are folded up and sewed together at the edge, the flesh side being innermost, and the shagreened hair side outwards; after which they are dipped three times in the remains of an exhausted kettle of the same dye, the superfluous

dye being each time expressed; and, after this process, they are dipped in the fresh dye prepared as above, which must not be expressed. The skins are then hung up in the shade to dry; after which they are cleaned and paired. For black shagreen gall-nuts and vitriol are employed. The skins, moist from the pickle, are thickly besmeared with finely pulverised gall-nuts. They are then folded and laid over each other twenty-four hours. A new ley, of bitter saline earth or schora, is prepared and poured hot into small troughs. In this ley each skin is several times dipped; after which they are again besmeared with pounded gall-nuts, and placed in heaps for a certain period, that the galls may thoroughly penetrate them, and they are dried and beat to free them from the dust of the galls. They are then rubbed over, on the shagreen side, with melted sheep's tallow, and exposed a little in the sun, that they may imbibe the grease. The shagreen makers roll up each skin separately and squeeze it with their hands to promote the absorption of the tallow. The superfluous particles are removed by a blunt wooden scraper; and, when the skins have lain some time, a sufficient quantity of vitriol of iron is dissolved in water, with which the shagreen is moistened on both sides, and thus acquires a beautiful black dye. To obtain white shagreen the skins must first be moistened on the shagreen side with a strong solution of alum. When the skin has imbibed this liquor it is daubed over on both sides with a paste made of flour which is suffered to dry. The paste is then washed off with alum water, and the skin is placed in the sun till it is completely dry. As soon as it is dry it is gently besmeared with pure melted sheep's tallow, which it is suffered to imbibe in the sun; and, to promote the effect, it is pressed and worked with the hands. The skins are then fastened in succession to the before-mentioned bench, where warm water is poured over them, and the superfluous fat is scraped off with a blunt wooden instrument. Shagreen perfectly white is thus obtained, and nothing remains but to pare the edges and dress it. But this white shagreen is not intended so much for remaining in that state as for receiving a dark red dye; because, by the above previous process, the color becomes much more perfect. The skins destined for a red color, after they have been whitened, must be left to soak in the pickle for twenty-four hours. The dye is prepared from cochineal. About a pound of the dried herb tschagann, which grows in great abundance near Astracan, and is a kind of soda plant or kali (*salsola ericoides*) is boiled a full hour in a kettle containing about four common handfuls of water; by which means the water acquires a greenish color. The herb is then taken out, and about half-a-pound of pounded cochineal is put into the kettle, and the liquor is left to boil a full hour. About fifteen or twenty drachms of orchilla is added, and, when the liquor has been boiled for some time longer, the kettle is removed from the fire. The skins taken from the pickle are then placed over each other in troughs; and the dye liquor is poured over them four different times, and rubbed into them with the hands, that the color may be equally

imbibed and diffused. The liquor each time is expressed: after which they are fit for being dried. Skins prepared in this manner are sold at a much dearer rate than any of the other kinds.'

SHAHABAD, a large fertile district of the province of Bahar, Hindostan; it is advantageously situated between the rivers Soane and Ganges, as they approach their confluence. It is estimated to contain a million of inhabitants, in the proportion of nineteen Hindoos to one Mahometan. Its towns are Chunar, Boujepore, and Arrah. It constitutes one of the British Bahar collectorships, and is governed by a judge, who is amenable to the circuit court of Patna. Its capital is Arrah.

SHAHJEHANPORE, a town of Hindostan, in the province of Delhi, and district of Bareily, on the east side of the Gurrah River. Long.  $79^{\circ} 53'$  E., lat.  $27^{\circ} 51'$  N.

SHAHJEHANPORE, a town of Hindostan, province of Malwah, on the banks of the Sagor-mutty River, belonging to the Mahrattas. It is a place of consequence, being the capital of a district. Long.  $76^{\circ} 18'$  E., lat.  $23^{\circ} 38'$  N. There are several other places of the same name, called after the emperor Shah Jehan.

SHAHNOOR, SANORE, or SEVANOOR, an extensive district of Hindostan, province of Beja-pore, belonging to the Mahrattas. It is situated between the Kistna and Tungbundra, and lat.  $15^{\circ}$  N. The country is fertile and under a good government would be very productive.

SHAHNOOR, SANORE, SEVANOOR, or SAVAN-NOOR, a city of Hindostan, the ruined capital of the above-mentioned district. It was formerly fortified, contained a palace and many good buildings, and is said to have been taken by the Mahometans so early as the year 1397. In the course of time it became the capital of one of the many nabobs who arose into power on the decline of the empire of Delhi. The first who is mentioned is the person who attended the Nizam Nasir Jung, when he entered the Carnatic in 1749, and in the following year took a part in the mutiny which cost Nasir Jung his life; in the year 1751 he was himself killed in a second rebellion. The successor of this nabob seems to have sought protection from the Mahrattas against the viceroy; for in 1756 a French army, in the service of the Nizam Salbut Jung, advanced to Sevanore, to exact the tribute due from the nabob; but, by the intrigues of the Mahratta chief, Morari Row, this object was defeated. In 1763 Hyder Aly sent to the nabob of Shahnoor, soliciting his alliance, and that of the two other Afghaun nabobs of Cuddapah and Kurnoul, against the Mahrattas; but, the former having rejected the overture, Hyder invaded his dominions, totally defeated him in a general engagement, and compelled him to submit to humiliating terms. Subsequently his country was invaded by the Mahrattas, who took permanent possession of one-half of his dominions. In 1779 Hyder compelled the nabob to enter into a double marriage with his family, the nabob taking Hyder's sister for wife, and giving his daughter to Kereem Sahib, the second son of Hyder. This, however, could not save the nabob from the merciless treatment of Tippoo Sultan, who, in 1786, took

Shahnoor, plundered it of every thing valuable, and forced the nabob to take refuge with the Mahrattas. At the conclusion of the war Shahnoor was included in the portion of territory assigned to the Mahrattas.

SHAIL, *v. n.* Belg. and Teut. *schail*. To walk sideways. A low word.

Child, you must walk straight, without skewing and *shailing* to every step you set. *L'Estrange.*

SHAKE, *v. a., v. n., & n. s.* { Saxon *feacan*;  
SHAKER, *n. s.* { Swedish *shaka* ;  
Goth. *skeaka*. To agitate; make to tremble or totter, or to throw down by violent motion; to drive off; drive away by such motion; sometimes taking off: to be agitated, driven, &c., in this way; be in terror: and, as a noun substantive, the concussion or motion produced: shaker corresponding.

I will shake mine hand upon them, and they shall be a spoil to their servants. *Zeck. ii. 9.*

The stars fell unto the earth, even as a fig-tree casteth her untimely figs when she is shaken of a mighty wind. *Rev. vi.*

When ye depart, shake off the dust of your feet. *Matt. x.*

Who honours not his father,  
Henry the fifth, that made all France to quake,  
Shake he his weapon at us, and pass by. *Shakspeare.*

Macbeth is ripe for shaking, and the powers above Put on their instruments. *Id.*

The tyrannous breathing of the north Shakes all her buds from blowing. *Id.*

A sly and constant knave, not to be shak'd. *Id. Cymbeline.*

This respite shook  
The bosom of my conscience. *Id. Henry VIII.*

With the slave  
He ne'er shook hands, nor bid farewell to him,  
Till he unseamed him from the nape to th' chops. *Shakspeare.*

Be pleased that I shake off these names you give me: *Id.*

Antonio never yet was thief or pirate. *Id.*

Thy sight, which should  
Make our eyes flow with joy, hearts dance with comforts,  
Constrains them weep, and shake with fear and sorrow. *Id.*

If that thy fame with every toy be pos'd,  
'Tis a thin web, which poisonous fancies make;  
But the great soldier's honour was compos'd  
Of thicker stuff, which could endure a shake:  
Wisdom picks friends; civility plays the rest,  
A toy, shunn'd cleanly, passeth with the best. *Herbert.*

The rapid wheels shake heaven's basis. *Milton.*

Under his burning wheels  
The stedfast empyrean shook throughout,  
All but the throne itself of God. *Id.*

Go, then, the guilty at thy will chastise:  
He said; the shaker of the earth replies. *Pope's Odyssey.*

SHAKERS, or SHAKING QUAKERS, a sect which arose at Manchester, in England, about 1747, and has since been transferred to America, where it now consists of a number of thriving families. The founders were a number of ob-

scure Quakers; and the Shakers still agree with the Friends in their rejection of the civil and ecclesiastical authority, and military service, in their objection to taking oaths, their neglect of the common courtesies of society, their rejection of the sacraments, and their belief in the immediate revelations of the Holy Ghost (gifts). At first, the motions from which they derive their name were of the most violent, wild, and irregular nature—leaping, shouting, clapping their hands, &c.; but at present, they move in a regular, uniform dance, to the singing of a hymn, and march round the hall of worship, clapping their hands in regular time. There are at present fifteen families, as their communities are called, in the United States, comprising 6000 individuals. In these communities, the property is held in common, and the members are distinguished for their industry, frugality, honesty, and good morals. Celibacy is enjoined, and their numbers are recruited by converts. The office of leader is bestowed by impulse or revelation on him who has the gift to assume it. The sect of Shakers was first introduced into America by Anne Lee, who, in 1770, became their leader. She was born at Manchester, in 1736, and was the daughter of a blacksmith of Manchester, where she also, at an early age, became the wife of a blacksmith. Her first "testimony of salvation and eternal life," borne in 1770, was the injunction of celibacy as the perfection of human nature, and the holding forth herself as a divine person. She was from this time honored with the title of "mother Anne," and she styled herself "Anne the word." Having been persecuted in England, she went out to America in 1774, with several members of the society, and formed the first community at Watervliet, near Albany, where she died in 1784. Societies were soon organized at New Lebanon, in New York, and at Enfield, in Connecticut, and have gradually increased to their present number.

SHAKSPERE, or SHAKESPEARE (William), the prince of dramatic writers, was born at Stratford-upon-Avon, in Warwickshire, on the 23d of April, 1564. From the register of that town it appears that a plague broke out there on the 30th of June following, which raged with great violence; but fortunately it did not reach the house in which this infant prodigy lay. His father, John Shakspere, enjoyed a small patrimonial estate, and was a considerable dealer in wool; his mother was the daughter and heir of Robert Arden, of Wellingcote. Our illustrious poet, being designed for the business of his father, received no better education than the master of the free-school of Stratford could afford. After applying some time to the study of Latin, he was called home to assist his father, who seems to have been reduced in his circumstances. Before he was nineteen he married the daughter of Mr. Hathaway, a substantial yeoman near Stratford. This lady was eight years older than her husband. Having fallen into bad company, he was seduced into some profligate actions, which drew on him a criminal prosecution, and at length forced him to take refuge in the capital. In concert with his associates he broke into a park

belonging to Sir Thomas Lucy of Charlecote, and carried off some deer of his. If any thing can extenuate his guilt in this it must be the opinions of the age. One thing is certain, that Shakspeare thought the crime venial, and that the prosecution which Sir Thomas raised against him was carried on with great severity. Shakspeare testified his resentment against Lucy by writing a satirical ballad, which exasperated him so much that the process was carried on with redoubled violence; and the young poet, to avoid the punishment of the law, was obliged to fly. Of this ballad tradition has only preserved the first stanza :—

A parliamente member, a justice of peace,  
At home a poor scare-crow, at London an asse.  
If lowsie is Lucy, as some volke miscalle it,  
Then Lucy is lowsie whatever befall it:  
    He thinks himself great,  
    Yet an asse in his state,  
We allowe by his ears but with asses to mate.  
If Lucy is lowsie, as some volke miscalle it,  
Sing lowsie Lucy whatever befall it.

If the rest of the ballad were of a piece with this stanza, it might assist us to form some opinion of the irritability of the baronet, but could convey no idea of the opening genius of Shakspeare. Thus expelled from his native village, he repaired to London, where he was glad to accept a subordinate office in the theatre. It has been said that he was first engaged, while the play was acting, in holding the horses of those who rode to the theatre. As his name is found printed among those of the other players, before some old plays, it is probable that he was some time employed as an actor; but we are only told that the part which he acted best was that of the Ghost in Hamlet; and that he appeared in the character of Adam in *As You Like It*. In Ben Jonson's play of *Every Man in his Humor*, Shakspeare is said to have played the part of Old Knowell. See Malone's *Chronology*, in his edition of Shakspeare. But, though not qualified to shine as an actor, he was now in the situation which could most effectually rouse those latent sparks of genius which afterwards burst forth with so resplendent a flame. Being well acquainted with the mechanical business of the theatre and the taste of the times; possessed of a knowledge of the characters of men resembling intuition, an imagination that ranged at large through nature, selecting the grand, the sublime, and the beautiful; a judicious caution, that disposed him to prefer those plots which had already been found to please; an uncommon fluency and force of expression; he was qualified at once to eclipse all who had gone before him. Notwithstanding the unrivalled genius of Shakspeare, most of his plots were the invention of others, which, however, he certainly much improved, if he did not entirely new-model. Among his patrons, the earl of Southampton is particularly honored by him, in the dedication of two poems, *Venus and Adonis*, and *Lucrece*; in the latter, especially, he expressed himself in such terms as gives countenance to what is related of that patron's distinguished generosity to him. In the beginning of king James I.'s reign (if not sooner) he was one of the principal managers of the playhouse, and

continued in it several years afterwards; till, having acquired such a fortune as satisfied his moderate wishes and views in life, he quitted the stage, and all other business, and passed the remainder of his time in an honorable ease, at his native town of Stratford, where he lived in a handsome house of his own purchasing, to which he gave the name of New Place; and he had the good fortune to save it from the flames in the dreadful fire that consumed the greatest part of the town in 1614. In the beginning of 1616 he made his will, wherein he testified his respect to his quondam partners in the theatre; he appointed his youngest daughter, jointly with her husband, his executors, and bequeathed to them the best part of his estate, which they came into the possession of not long after. He died on the 23rd of April following, being the fifty-third year of his age; and was interred among his ancestors on the north side of the chancel, in the great church of Stratford, where there is a handsome monument erected for him, inscribed with the following elegiac distich in Latin :—

*Judicio Pylium, genio Socratem, arte Maronem,  
Terra tegit, Populus mōret, Olympus habet.*

In 1740 another very noble one was raised to his memory at the public expense, in Westminster Abbey; an ample contribution for this purpose being made upon exhibiting his tragedy of *Julius Cæsar*, at the Theatre-Royal in Drury Lane, April 28th, 1738. A mulberry tree, planted upon his estate by his own hands, was cut down not many years ago; and the wood being converted to several domestic uses was all eagerly bought at a high price, and each single piece treasured up by its purchaser as a precious memorial of the planter. The character of Shakspeare as a dramatic writer has been often drawn, but perhaps never with more accuracy than by Dr. Johnson :—“Shakspeare,” says he, “is, above all writers, at least above all modern writers, the poet of nature; the poet that holds up to his readers a faithful mirror of manners and of life. His characters are not modified by the customs of particular places, unpractised by the rest of the world; by the peculiarities of studies or professions, which can operate but upon small numbers; or by the accidents of transient fashions or temporary opinions; they are the genuine progeny of common humanity, such as the world will always supply, and observation will always find. His persons act and speak by the influence of those general passions and principles by which all minds are agitated, and the whole system of life is continued in motion. In the writings of other poets a character is too often an individual; in those of Shakspeare it is commonly a species. It is from this wide extension of design that so much instruction is derived. It is this which fills the plays of Shakspeare with practical axioms and domestic wisdom. It was said of Euripides that every verse was a precept; and it may be said of Shakspeare that from his works may be collected a system of civil and economical prudence. Yet his real power is not shown in the splendor of particular passages, but by the progress of his fable, and the tenor of his dialogue; and he that tries to recommend him, by select quotations,

will succeed like the pedant in Hierocles, who, when he offered his house to sale, carried a brick in his pocket as a specimen. Upon every other stage the universal agent is love, by whose power all good and evil is distributed, and every action quickened or retarded. But love is only one of many passions; and, as it has no great influence upon the sum of life, it has little operation in the dramas of a poet who caught his ideas from the living world, and exhibited only what he saw before him. He knew that any other passion, as it was regular or exorbitant, was a cause of happiness or calamity. Characters thus ample and general were not easily discriminated and preserved; yet perhaps no poet ever kept his personages more distinct from each other. Other dramatists can only gain attention by hyperbolical or aggravated characters, by fabulous and unexampled excellence or depravity, as the writers of barbarous romances invigorated the reader by a giant and a dwarf; and he that should form his expectations of human affairs from the play, or from the tale, would be equally deceived. Shakspeare has no heroes; his scenes are occupied only by men, who act and speak as the reader thinks that he should himself have spoken or acted on the same occasion: even where the agency is supernatural, the dialogue is level with life. Other writers disguise the most natural passions and most frequent incidents: so that he who contemplates them in the book will not know them in the world: Shakspeare approximates the remote, and familiarises the wonderful; the event which he represents will not happen, but, if it were possible, its effects would probably be such as he has assigned; and it may be said that he has not only shown human nature as it acts in real exigencies, but as it would be found in trials to which it cannot be exposed. This, therefore, is the praise of Shakspeare, that his drama is the mirror of life; that he who has mazed his imagination, in following the phantoms which other writers raise up before him, may here be cured of his delirious ecstacies, by reading human sentiments in human language; by scenes from which a hermit may estimate the transactions of the world, and a confessor predict the progress of the passions.' The learning of Shakspeare has frequently been a subject of enquiry. That he possessed much classical knowledge does not appear, yet he was certainly acquainted with the Latin poets, particularly with Terence, as Colman has justly remarked, which appears from his using the word *thraso-nical*. Nor was he unacquainted with French and Italian. We are indeed told that the passages in which these languages occur might be impertinent additions of the players; but is it probable that any of the players so far surpassed Shakspeare? That much knowledge is scattered over his works is very justly observed by Pope; but it is often such knowledge as books did not supply. 'There is, however, proof enough,' says Dr. Johnson, 'that he was a very diligent reader; nor was our language then so indigent of books, but that he might very liberally indulge his curiosity without excursion into foreign literature. Many of the Roman authors were translated, and some of the Greek; the Reformation

had filled the kingdom with theological learning, most of the topics of human disquisition had found English writers; and poetry had been cultivated, not only with diligence, but success. This was a stock of knowledge sufficient for a mind so capable of appropriating and improving it.' The works of Shakspeare consist of thirty-five dramatic pieces. The following is the chronological order, which Mr. Malone has endeavoured to establish, after a minute investigation, in which he has in general been successful:—

1. First Part of King Henry VI.	1589
2. Second Part of King Henry VI.	1591
3. Third Part of King Henry VI.	1591
4. A Midsummer Night's Dream	1592
5. Comedy of Errors	1593
6. Taming of the Shrew	1594
7. Love's Labor Lost	1594
8. Two Gentlemen of Verona	1595
9. Romeo and Juliet	1595
10. Hamlet	1596
11. King John	1596
12. King Richard II.	1597
13. King Richard III.	1597
14. First Part of King Henry IV.	1597
15. Second Part of King Henry IV.	1598
16. The Merchant of Venice	1598
17. All's Well that Ends Well	1598
18. King Henry V.	1599
19. Much Ado About Nothing	1600
20. As You Like It	1600
21. Merry Wives of Windsor	1601
22. King Henry VIII.	1601
23. Troilus and Cressida	1602
24. Measure for Measure	1603
25. The Winter's Tale	1604
26. King Lear	1605
27. Cymbeline	1605
28. Macbeth	1606
29. Julius Caesar	1607
30. Antony and Cleopatra	1608
31. Timon of Athens	1609
32. Coriolanus	1610
33. Othello	1611
34. The Tempest	1612
35. Twelfth Night	1614

The first three of these, Mr. Malone thinks, there is very strong reason to believe are not the original productions of Shakspeare; but that he probably altered them, and added some new scenes. In the first folio edition, in 1623, these plays were entitled 'Mr. William Shakspeare's Comedies, Histories, and Tragedies.' They have been published by various editors. The first folio edition by Isaac Jaggard and Edward Blount; the second folio, 1632, by Thomas Cotes for Robert Allott; the third, 1664, for P. C.; the fourth, 1685, for H. Herringham, E. Brewster, and R. Bentley. Rowe published an 8vo. edition in 1709, in 7 vols., and a 12mo. edition in 1714 in 9 vols., for which he received £36 10s. Pope published a 4to. edition in 1725 in 6 vols., and a 12mo in 1728 in 10 vols., for which he was paid £217 12s. Theobald gave a new edition in 8vo. in 1733 in 7 vols., another in 12mo in 1740 in 8 vols., and received for his labor £625 10s. Sir Thomas Hanmer published

an edition in 1744 in 6 vols. 4to. Dr. Warburton's 8vo. edition came out in 1747 in 8 vols., for which he was paid £560. The editions published since that time are Dr. Johnson's in 1765 in 8 vols. 8vo.; Steven's in 1766 in 4 vols. 8vo.; Capell's in 1768 in 10 vols. crown 8vo., for this the author was paid £300. A second edition of Hanmer's in 1771 in 6 vols.; Johnson's and Stevens's in 1773 in 10 vols. 8vo.; a second edition in 1778; a third by Reed in 1785; and Malone's crown 8vo. edition in 1789 in 10 vols. The most authentic of the old editions is that of 1623. 'At last,' says Dr. Johnson, 'an edition was undertaken by Rowe; not because a poet was to be published by a poet, for Rowe seems to have thought very little on correction or explanation, but that our author's works might appear like those of his fraternity, with the appendages of a life and commendatory preface. Rowe has been clamorously blamed for not performing what he did not undertake, and it is time that justice be done him, by confessing, that though he seems to have had no thought of correction beyond the printer's errors, yet he has made many emendations, if they were not made before, which his successors have received without acknowledgment, and which, if they had produced them, would have filled pages with censures of the stupidity by which the faults were committed, with displays of the absurdities which they involved, with ostentatious expositions of the new reading, and self-congratulations on the happiness of discovering it. The nation had been for many years content with Mr. Rowe's performance, when Mr. Pope made them acquainted with the true state of Shakspeare's text, showed that it was extremely corrupt, and gave reason to hope that there were means of reforming it. Mr. Pope's edition, however, he observes, fell below his own expectations; and he was so much offended, when he was found to have left any thing for others to do, that he passed the latter part of his life in a state of hostility with verbal criticisms. The only task, in the opinion of Mr. Malone, for which Pope was eminently and indisputably qualified, was to mark the faults and beauties of his author. When he undertook the office of a commentator, every anomaly of language, and every expression that was not currently in use, were considered as errors or corruptions, and the text was altered or amended, as it was called, at pleasure. Pope is openly charged with being one of the great corruptors of Shakspeare's text. Pope was succeeded by Theobald, who collated the ancient copies, and rectified many errors. He was, however, a man of narrow comprehension and of little learning; and, what is worse, in his reports of copies and editions, he is not to be trusted without examination. From the liberties taken by Pope, the edition of Theobald was justly preferred, because he professed to adhere to the ancient copies more strictly, and illustrated a few passages by extracts from the writers of our poet's age. Still, however, he was a considerable innovator; and, while a few arbitrary changes made by Pope were detected, innumerable sophistications were silently adopted. Sir Thomas Hanmer, who comes next, was a man of critical

abilities, and of extensive learning. His corrections are commonly just, but sometimes capricious. He is censurable, too, for receiving without examination almost all the innovations of Pope. The original and predominant error of Warburton's commentary is acquiescence in his first thoughts; that precipitation which is produced by consciousness of quick discernment; and that confidence which presumes to do, by surveying the surface, what labor only can perform by penetrating to the bottom. His notes exhibit sometimes perverse interpretations, and sometimes improbable conjectures; he at one time gives the author more profundity of meaning than the sentence admits, and at another discovers absurdities where the sense is plain to every other reader. But his emendations are likewise often happy and just; and his interpretation of obscure passages learned and sagacious. It has indeed been said by his defenders, that his great object was to display his own learning; and certainly, in spite of the clamor raised against him for substituting his own chimerical conceits instead of the genuine text of Shakspeare, his work increased his reputation. But as it is of little value as a commentary on Shakspeare, since Warburton is now gone, his work will probably sink into oblivion. In 1765 Dr. Johnson's edition, which had long been impatiently expected, was given to the public. His vigorous and comprehensive understanding threw more light on his author than all his predecessors had done. The character which he gave of each play is generally just. His refutation of the false glosses of Theobald and Warburton, and his numerous explications of involved and difficult passages, entitle him to the gratitude of every admirer of Shakspeare. The last editor is Mr. Malone, who was eight years employed in preparing his edition. By collating the most authentic copies, he has been careful to purify the text. He has been so industrious to discover the meaning of the author, that he has ransacked many volumes, and trusts that, besides his additional illustrations, not a single valuable explication of any obscure passage in these plays has ever appeared which he has not inserted in his edition. He rejects Titus Andronicus, as well as the three plays formerly mentioned, as not being the authentic productions of Shakspeare. To the whole he has added an appendix, and a copious glossary. Of this work a less expensive edition has been published in 7 vols. 12mo., in which the general introductory observations prefixed to the different plays are preserved, and the numerous notes abridged. This judicious commentator has certainly done more for the elucidation and correction of Shakspeare than all who came before him, and has followed with indefatigable patience the only road which a commentator of Shakspeare ought to observe. Within fifty years after our poet's death, Dryden says that he was become 'a little obsolete'; and in the beginning of the eighteenth century lord Shaftesbury complains of his rude unpolished style, and his antiquated phrase and wit. These complaints were owing to the great revolution which the English language has undergone, and to the want of an enlightened com-

nentator. These complaints are now removed, for an enlightened commentator has been found in Mr. Malone. In 1790 a copious index to the remarkable passages and words in the plays of Shakspeare was published by the Rev. Mr. Ayscough, a gentleman to whom the literary world is much indebted for several very valuable keys of knowledge. In fine, the admirers of Shakspeare are now furnished with every help that can enable them to understand the sense and to taste the beauties of this illustrious poet.

**SHALE,** *n. s.* Sax. *reala.* A husk; the case of seeds in siliquous plants.

Behold you poor and starved band,  
And your fair shew shall suck away their souls,  
Leaving them but the *shales* and husks of men.

Shakspeare.

**SHALE,** in the old system of mineralogy, a species of schistus. It is a black slaty substance, or a clay hardened into a stony consistence, and so much impregnated with bitumen that it becomes somewhat like coal. The acid emitted from shale, during its calcination, uniting itself to the argillaceous earth of the shale, forms alum. About 120 tons of calcined shale will make one ton of alum. The shale, after being calcined, is steeped in water, by which means the alum, which is formed during the calcination of the shale, is dissolved: this dissolved alum undergoes various operations before it is formed into the alum of the shops. Watson's Chemical Essays, vol. ii. p. 315. See **ALUM.** This kind of slate forms large strata in Derbyshire. It is found in large strata, generally above the coal, in most coal counties of this kingdom. Dr. Short says that the shale wastes the lead ore near it, by its strong acid; and that it corrodes and destroys all minerals near it, except iron or coal, of whose vitriol it partakes.

**SHALL,** *verb defect.* Sax. *reéal.* I owe, or I ought. In Chaucer, the faithe I shall to God, means the faith I owe to God: thence it became a sign of the future tense. It has no tenses but shall future, and should imperfect.

It is a mind that *shall remain.*

—*Shall remain!*

Hear you this triton of the minnows? Mark you An absolute *shall?* Shakspeare. *Coriolanus.*

Some praises come of good wishes and respects, when, by telling men what they are, they represent to them what they *should be.* Bacon.

There is a fabulous narration that in the northern countries there *should* be an herb that growth in the likeness of a lamb, and feedeth upon the grass.

Bacon's *Natural History.*

Let not a desperate action more engage you Than safety *should.* Ben Jonson's *Catiline.*

That he *shall* receive no benefit from Christ is the affirmation where all his despair is founded: and the one way of removing this dismal apprehension is, to convince him that Christ's death, and the benefits thereof, either do, or, if he perform the condition required of him, *shall* certainly belong to him.

Hammond's *Fundamentals.*

To do thee honour I will shed their blood, Which the just laws, if I were faultless, *should.*

Waller.

See Romulus the great:

This prince a priestess of your blood *shall bear;* And, like his sire, in arms he *shall appear.*

Dryden's *Aeneid.*

So subjects love just kings, or so they *should.*

Dryden.

The girls look upon their father as a clown, and the boys think their mother no better than she *should be.*

Addison.

I conclude that tidings are not as they *should be.*

Swift.

**SHALLOON'**, *n. s.* From Chalons, in France. A slight woollen stuff.

In blue *shalloon* shall Hannibal be clad,  
And Scipio trail an Irish purple plaid.

Swift.

**SHAL'LOP,** *n. s.* Fr. *chaloupe.* A small boat.

You were resolved, after your arrial into Oroonoke, to pass to the mine; and, to that end, you desired to have Sir John Fearne's *shallop*: I do not allow of that course, because ye cannot land so secretly but that some Indians on the river side may discover you, who giving knowledge of your passage to the Spaniards, you may be cut off before you can recover your boat.

Raleigh.

Our hero set

In a small *shallop*, fortune in his debt.

Waller.

A **SHALLOP**, or **SLOOP**, is a small light vessel, with only a small main-mast, and fore-mast, and lug-sails, to hale up, and let down, on occasion. Shallops are commonly good sailers, and are therefore often used as tenders upon men of war.

**SHALLOW,** *adj. & n. s.* Probably com-

**SHALLOW' BRAIN,** *adj.* Pounded of shioal

**SHALLOW'LY,** *adv.* and low.—John-

**SHALLOW'NESS,** *n. s.* son. From Goth.

*sigu la*, to sink low.—Thomson.

Not deep; having the bottom at no great distance from the surface: not intellectually deep; not profound; not deep of sound: the noun substantive and adverb corresponding.

This is a very *shallow* monster,  
Afraid of him? A very *shallow* monster,  
The man i' th' moon! A most poor credulous mon-  
ster.

Shakspeare.

I had been drowned, but that the shore was shelvy  
and *shalbow*; a death that I abhor.

Id. *Merry Wives of Windsor.*

I should not see the sandy hour-glass run;  
But I should think of *shallows* and of flats;  
And see my wealthy Andrew docked in sand,  
Veiling her high top lower than her ribs.  
To kiss her burial.

Id. *Coriolanus.*

Most shallowly did you these arms commence,  
Fondly brought here, and foolishly sent hence.

Shakspeare.

That inundation, though it were *shallow*, had a long continuance, whereby they of the vale, that were not drowned, perished for want of food.

Bacon.

The king was neither so *shallow* nor so ill advertised, as not to perceive the intention of the French king, for the investing himself of Britaigne.

Id. *Henry VII.*

A swift stream is not heard in the channel, but upon *shallows* of gravel.

Id. *Natural History.*

If a virginal were made with a double concave, the one all the length of the virginal, and the other at the end of the strings, as the harp hath, it must make the sound perfecter, and not so *shallow* and jarring.

Bacon.

The load lieth open on the grass, or but *shallowly* covered.

Curew.

By it do all things live their measured hour :  
We cannot ask the thing which is not there,  
Blaming the shallowness of our request. *Herbert.*

I cannot wonder enough at the shallowness and impudent zeal of the vulgar sort in Drunia, who were carried away with such an ignorant devotion for his successes, when it little concerned their religion or security. *Howel.*

You that so oft have sounded  
And fathomed all his thoughts, that know the deeps  
And shallows of his heart, should need no instru-  
ments

To advance your ends. *Denham.*

Having but newly left those grammatic flats and shallows, where they stuck unreasonably, to learn a few words with lamentable construction, and now on the sudden transported, to be tossed with their unballasted wits in fathomless and unquiet deeps of controversy, they do grow into hatred of learning. *Milton.*

Uncertain and unsettled he remains,  
Deep versed in books, and shallow in himself. *Id.*

I am made a shallow forded stream,  
Seen to the bottom : all my clearness scorned,  
And all my faults exposed. *Dryden's All for Love.*

Shallow brooks, that flowed so clear,  
The bottom did the top appear. *Dryden.*

He sounds and fathoms him to find  
The shallows of his soul. *Id. Spanish Fryar.*

Three more fierce Eurus in his angry mood  
Dashed on the shallows of the moving sand,  
And in mid ocean left them moored a-land. *Id. Æneid.*

Their spawn being lighter than the water, there it would not sink to the bottom : but be buoyed up by it, and carried away to the shallows. *Ray on the Creation.*

With the use of diligence and prudent conduct, he may decline both rocks and shallows. *Norris.*

In arms of the sea, and among islands, there is no great depth, and some places are plain shallows. *Burnet.*

It cannot but be matter of just indignation to all good men, to see a company of lewd shallow-brained huffs making atheism, and contempt of religion, the sole badge of wit. *South.*

One would no more wonder to see the most shallow nation of Europe the most vain, than to find the most empty fellows of every nation more conceited than the rest. *Addison.*

The sea could not be much narrower than it is, without a great loss to the world ; and must we now have an ocean of mere flats and shallows, to the utter ruin of navigation ? *Bentley.*

The like opinion he held of Meotis Palus, that by the floods of Tanais, and the earth brought down thereby, it grew observably shallower in his days, and would in process of time become a firm land. *Browne's Vulgar Errors.*

SHALM, n. s. Germ. *shelm*; Teut. *schemme*. A kind of musical pipe.

Every captain was commanded to have his soldiers in readiness to set forward upon the sign given, which was by the sound of a shalm or hoboy. *Knolles's History of the Turks.*

SHAM, v. n., n. s., & adj. Welsh *shommi*, to cheat. To trick ; cheat ; fool with a fraud : a low word : the derivatives corresponding.

Men tender in point of honour, and yet with little regard to truth, are sooner wrought upon by shame than by conscience, when they find themselves fooled and shammed into a conviction. *L'Estrange.*

We must have a care that we do not, for want of laying things and things together, sham fallacies upon the world for current reason. *Id.*

It goes a great way when natural curiosity and vulgar prejudice shall be assisted with the *shams* of astrological judgments. *Id.*

He that first brought the *sham*, wheedle, or banter in use, put together, as he thought fit, those ideas he made it stand for. *Locke.*

That in the sacred temple needs would try  
Without a fire the unheated gums to fry,  
Believe who will the solemn *sham*, not I. *Addison.*

Then all your wits that flee and *sham*,  
Down from Don Quixote to Tom Tram,  
From whom I jests and puns purloin,  
And slyly put them off for mine,  
Fond to be thought a country wit. *Prior.*

Never join the fray,  
Where the *sham* quarrel interrupts the way. *Gay.*

SHAMAMS are wizards or conjurers, in high repute among several idolatrous nations inhabiting different parts of Russia. By their enchantments they pretend to cure diseases, to divert misfortunes, and to foretel futurity. They are great observers of dreams, by the interpretation of which they judge of their good or bad fortune. They pretend likewise to chiromancy, and to foretel a man's good or ill success by the lines of his hand. By these and such like tricks they have a very great ascendency over the understandings, and a great influence on the conduct, of those people.

SHAMBLES, n. s. Of uncertain etymology ; Ital. *scannuglia*.—Johnson : or Lat. *scanni macelli*. The place where butchers kill or sell their meat ; a butchery.

Far be the thoughts of this from Henry's heart,  
To make a *shambles* of the parliament-house. *Shakspeare. Henry VI.*

I hope my noble lord esteems me honest,  
—Oh, ay, as summer flies are in the *shambles*,  
That quicken even with blowing. *Id. Othello.*

He warned a flock of sheep, that were driving to the *shambles*, of their danger ; and, upon uttering some sounds, they all fled. *Arbuthnot.*

When the person is made the jest of the mob, or his back the *shambles* of the executioner, there is no more conviction in the one than in the other. *Watts.*

SHAMBLES, among miners, a sort of niches or landing places, left at such distances in the adits of the mines that the shovel-men may conveniently throw up the ore from *shamble* to *shamble* till it comes to the top of the mine.

SHAMBLING, adj. See SCAMBLING. Moving awkwardly and irregularly. A low bad word.

By that *shambling* in his walk, it should be my rich banker, Gomez, whom I knew at Barcelona. *Dryden's Spanish Fryar.*

So when nurse Nokes to act young Ammon tries,  
With *shambling* legs, long chin, and foolish eyes,  
With dangling hands he strokes the imperial robe,  
And with a cuckold's air commands the globe. *Smith.*

SHAME, n. s., v. a. & v. n.)	Saxon <i>ream</i> ;
SHAME'FACED, adj.	Teut. <i>scham</i> ; Belg. <i>schem</i> .
SHAME'FACEDLY, adv.	Pudicity ;
SHAME'FACEDNESS, n. s.	the passion felt at
SHAME'FUL, adj.	a supposed loss of
SHAME'FULLY, adv.	reputation ; the
SHAME'LESS, adj.	cause or reason of
SHAME'LESSLY, adv.	shame ; disgrace ;
SHAME'LESSNESS, n. s.	ignominy ; re-

proach : to shame is, to make ashamed ; disgrace ; to be ashamed : shamed, modest ; bashful ; easily discomfited : the adverb and noun substantive corresponding : shameful is, disgraceful ; infamous ; ignominious ; raising shame : the adverb corresponding : shameless is, devoid of shame ; impudent ; audacious : the adverb and noun substantive corresponding.

The king to day, as one of the vain fellows, shamelessly uncovereth himself. *2 Samuel vi. 20.*

A foul *shame* is upon the thief. *Eccles. v. 14.*

Would she *shamefully* fail in the last act in this contrivance of the nature of man ? *More.*

Philoclea, who blushing, and withal smiling, making *shamefacedness* pleasing, and pleasure *shame-faced*, tenderly moved her feet, unwonted to feel the naked ground. *Sidney.*

Lamenting sorrow did in darkness lie,  
And *shame* his ugly face did hide from living eye. *Spenser*

Great *shame* it is, thing so divine in view,  
Made for to be the world's most ornament,  
To make the bait her gazers to embrow ;  
Good *shames* to be to ill an instrument. *Id.*

She is the fountain of your modesty ;  
You *shame-faced* are, but *shamefacedness* itself is she. *Faerie Queene.*

None but that saw, quoth he, would ween for  
truth,  
How *shamefully* that maid he did torment. *Id.*  
This all through that great prince's pride did fall,  
And came to *shameful* end. *Id.*

Peace, peace, for *shame*, if not for charity.  
—Urge neither charity nor *shame* to me :  
Uncharitably with me have you dealt,  
And *shamefully* my hopes by you are butchered :  
My charity is outrage, life my *shame* ;  
And in my *shame* still lives my sorrows' rage. *Shakspeare. Richard III.*

To tell thee of whom derived,  
Were *shame* enough to shame thee, wert thou not  
*shameless*. *Shakespeare.*

If thou hast power to raise him, bring him hither,  
And I've power to *shame* him hence :  
Oh, while you live, tell truth and *shame* the devil. *Id.*

*Sham'st thou not*, knowing whence thou art ex-  
traught,  
To let thy tongue detect thy base-born heart ? *Id.*  
Conscience is a blushing *shame-faced* spirit that  
mutinies in a man's bosom : it fills one full of obsta-  
cles. *Id. Richard III.*

Hyperbolus by suffering did traduce  
The ostracism, and *shamed* it out of use. *Cleaveland.*

To the trunk of it authors give such a magnitude,  
as I *shame* to repeat. *Raleigh's History of the World.*  
The *shameless* denial hereof by some of their friends,  
and the more *shameless* justification by some of their  
flatterers, makes it needful to exemplify, which I had  
rather forbear. *Raleigh.*

Cruel Auster thither lied him ;  
And, with the rush of one rude blast,  
*Shamed* not spitefully to waste  
All his leaves, so fresh, so sweet,  
And lay them trembling at his feet. *Crashaw.*

Being most impudent in her heart, she could, when  
she would, teach her cheeks blushing, and make  
*shamefacedness* the cloak of *shamelessness*. *Sidney.*

He that blushes not at his crime, but adds *shame-  
lessness* to his *shame*, hath nothing left to restore him  
to virtue. *Taylor.*

Despoiled  
Of all our good, *shamed*, naked, miserable. *Milton.*

## Applause

Turned to exploding hiss, triumph to *shame*,  
Cast on themselves from their own mouths. *Id.*

But I his holy secret

Presumptuously have published, impiously,  
Weakly at least, and *shamefully*. *Id. Agonistes.*

For this he shall live hated, be blasphemed,  
Seized on by force, judged, and to death condemned,  
A *shameful* and accurst ! *Milton.*

He must needs be *shamelessly* wicked that abhors  
not this licentiousness. *Hale.*

Hide, for *shame*,

Romans, your grandsires images,  
That blush at their degenerate progeny. *Dryden.*

The coward bore the man immortal spite,

Who *shamed* him out of madness into flight. *Id.*

Your *shameficed* virtue shunned the people's  
praise,

And senate's honours. *Id.*

None but fools, out of *shamefacedness* hide their  
ulcers, which, if shown, might be healed. *Id. Dufresnoy.*

A man may be *shame-faced*, and a woman modest, to  
the degree of scandalous. *L'Estrange.*

In the schools men are allowed, without *shame*, to  
deny the agreement of ideas ; or, out of the schools,  
from thence have learned, without *shame*, to deny  
the connection of ideas. *Locke.*

Were there but one righteous man in the world,  
he would hold up his head with confidence and  
honour ; he would *shame* the world, and *not* the  
world him. *South.*

God deliver the world from such guides, who are  
the *shame* of religion. *Id.*

Those who are ready enough to confess him, both  
in judgment and profession, are, for the most part,  
very prone to deny him *shamefully* in their doings. *Id. Sermons.*

God deliver the world from such hucksters of  
souls, the very *shame* of religion, and the *shamelss*,  
subverters of morality. *Id.*

From this time we may date that remarkable turn  
in the behaviour of our fashionable Englishmen, that  
makes them *shame-faced* in the exercise of those  
duties which they were sent into the world to perform. *Addison's Freeholder.*

His naval preparations were not more surprising  
than his quick and *shameful* retreat : for he returned  
to Carthage with only one ship, having fled without  
striking one stroke. *Arbuthnot.*

O *shame* to manhood ! shall one daring boy  
The scheme of all our happiness destroy ? *Pope's Odyssey.*

Who *shames* a scribbler, breaks a cobweb through :  
He spins the slight self-pleasing thread anew. *Pope.*

Such *shameless* bards we have ; and yet, 'tis true,  
There are as mad, abandoned critics too. *Id.*

The knave of diamonds tries his wily arts,  
And wins, O *shameful* chance ! the queen of hearts. *Id.*

But that effeminacy, folly, lust,  
Enervate and enfeeble, and needs must ;  
And that a nation *shamefully* debased  
Will be despised and trampled on at last,  
Unless sweet Penitence her powers renew,  
Is truth if history itself be true. *Cowper.*

SHAMGAR, the son of Anath, the third judge  
of Israel after Joshua. He delivered his country  
from the yoke of the Philistines, and slew 600 of  
them with an ox-goad, about A.M. 2657. See  
ISRAEL.

SHAMMAI, the name of three heroes of  
Israel, under David. See 2 Sam. xxiii. 11—17.  
25. 33.

SHAM'OIS, *n. s.* Fr. *chamois*. See CHAMOIS.  
A kind of wild goat.

I'll bring thee  
To clustering fibberds, and sometimes I'll get thee  
Young shamois from the rocks. *Shakespeare*

SHAMOIS, in zoology. See CAPRA.

SHAMOIS, CHAMOIS, or SHAMMY, in commerce, a kind of leather, either dressed in oil or tanned, much esteemed for its softness, pliancy, &c. It is prepared from the skin of the chamois or shamois, a kind of rupicapra, or wild goat, called also isard, inhabiting the mountains of the ci-devant French and Italian provinces of Dauphiny, Savoy, Piedmont, and the Pyrenees. Besides the softness and warmth of the leather, it has the faculty of bearing soap without damage; which renders it very useful on many accounts. In France, &c., some wear the skin raw, without any preparation. Shammy leather is used for the purifying of mercury, which is done by passing it through the pores of this skin, which are very close. The true chamois leather is counterfeited with common goat, kid, and even with sheep skins, the practice of which makes a particular profession, called by the French chamoiserie. The last, though the least esteemed, is yet so popular, and such vast quantities of it are prepared, especially about Orleans, Marseilles, and Thoulouse, that it may not be amiss to give the method of preparation.

The skins, being washed, drained, and smeared over with quick-lime on the fleshy side, are folded in two lengthwise, the wool outwards, and laid on heaps, and so left to ferment eight days, or, if they have been left to dry after flaying, then fifteen days. Then they are washed out, drained, and half dried; laid on a wooden leg, or horse, the wool stripped off with a round staff for that purpose, and laid in a weak pit, the lime whereof had been used before, and has lost the greatest part of its force. After twenty-four hours they are taken out, and left to drain twenty-four more; they are then put in another stronger pit. This done, they are taken out, drained, and put in again, by turns; which begins to dispose them to take oil; and this practice they continue for six weeks in summer or three months in winter: at the end whereof they are washed out, laid on the wooden leg, and the surface of the skin on the wool side peeled off, to render them the softer; then made into parcels, steeped a night in the river, in winter more, stretched six or seven over one another on the wooden leg, and the knife passed strongly on the flesh side, to take off any thing superfluous, and render the skin smooth. Then they are steeped as before, in the river, and the same operation is repeated on the wool side; they are then thrown into a tub of water, with bran in it, which is brewed among the skins till the greatest part sticks to them, and then separated into distinct tubs, till they swell, and rise of themselves above the water. By this means the remains of the lime are cleared out; they are then wrung out, hung up to dry on ropes, and sent to the mill, with the quantity of oil necessary to scour them: the best oil is that of stock-fish. Here they are first thrown in bundles into the river for twelve hours, then laid in the mill-trough, and fulled without

oil till they be well softened; then oiled with the hand, one by one, and thus formed into parcels of four skins each; which are milled and dried on cords a second time; then a third; and then oiled again and dried. This process is repeated as often as necessary; when done, if there be any moisture remaining, they are dried in a stove, and made up into parcels wrapped up in wool; after some time they are opened to the air, but wrapped up again as before, till such time as the oil seems to have lost all its force, which it ordinarily does in twenty-four hours. The skins are then returned from the mill to the chamoiser to be scoured: which is done by putting them in a lixivium of wood-ashes, working and beating them in it with poles, and leaving them to steep till the ley hath had its effect: then they are wrung out, steeped in another lixivium, wrung again; and this is repeated till all the grease and oil be purged out. When this is done, they are half dried, and passed over a sharp-edged iron instrument, placed perpendicular in a block, which opens, softens, and makes them gentle. Lastly, they are thoroughly dried, and passed over the same instrument again; which finishes the preparation, and leaves them in form of shammy. Kid and goat skins are shamoised in the same manner as those of sheep, excepting that the hair is taken off without the use of any lime; and that, when brought from the mill, they undergo a particular preparation called ramalling, more delicate and difficult than the others. It consists in this, that, as soon as brought from the mill, they are steeped in a fit lixivium, taken out, stretched on a round wooden leg, and the hair is scraped off with the knife; this makes them smooth, and, in working, to cast a kind of fine knap. The difficulty is in scraping them evenly.

SHAM'ROCK, *n. s.* Irish *scam rag*. The Irish name for three-leaved grass.

If they found a plot of watercresses or *shamrocks*, there they flocked as to a feast for the time.

*Spenser on Ireland.*

SHANGALLA, a race of negroes, on the northern frontier of Abyssinia, particularly on the lower part of the Mareb and Tacazze. The tract which they occupy consists of a belt varying in breadth, though averaging about forty miles. It is entirely covered with almost impenetrable forests, fit only for the production of wild animals. The Shangalla are complete savages, who go naked, neither sow nor plant, and have no fixed habitations. During the dry part of the year they live under the shade of trees, the lowest branches of which they cut near the stem, on the upper part, planting the ends of the branches in the earth. Having then covered them with the skins of beasts, and cut away the interior branches, they form a spacious pavilion, which, at a distance appears like a tent, the trunk serving for the pole, the top overshadowing it. During this season every tree is a house, peopled by a family. In the rainy season the soil dissolves completely into mire, and it is no longer possible to live above ground. The Shangalla then seek their winter quarters in caves of the mountains, which are of a soft gritty sand-stone, easily excavated. Here they live upon the

flesh which they have dried and prepared during the dry season. The elephant and rhinoceros are taken and killed by various devices. Those who reside where water abounds kill the hippopotami or river horses, which are exceedingly numerous: in sandy tracts, ostriches, and a beautiful species of lizard, form the principal food. Some feed chiefly upon locusts. These various tribes are correctly described by Ptolemy, according to their food, under the titles of Rhizophagi, Elephantophagi, Acridophagi, &c. The meat caught in the fair season is cut into thongs as thick as a man's thumb, like so many ropes, and hung up on the surrounding trees, where the sun dries and hardens it almost to the consistence of leather. In winter they beat it with a wooden mallet, then boil, and then roast it upon the embers.

**SHANK.**, *n.s.* Sax. *rceanca*; Belg. *schenkel*; Swed. *skank*. The middle joint of the leg; that part which reaches from the ankle to the knee: the long or hollow part of an instrument.

Eftsoons her white straight legs were altered  
To crooked crawling shanks, of marrow emptied:  
And her fair face to foul and loathsome hue,  
And her fine corps to a bag of venom grew.

Spenser.

The sixth age shifts  
Into the lean and slipp'd pantaloon,  
With spectacles on nose, and pouch on side;  
His youthful hose, well saved, a world too wide  
For his shrunk shanks.

Shakspeare. *As You Like It.*

Shut me nightly in a charnel-house,  
O'er covered quite with dead men's rattling bones,  
With reeky shanks, and yellow chapless skulls.

Shakspeare.

A stag says, if these pitiful shanks of mine were  
but answerable to this branching head, I can't but  
think how I should defy all my enemies.

I'Estrange.

The shank of a key, or some such long hole, the  
punch cannot strike, because the shank is not forged  
with substance sufficient.

Moxon.

**SHANK,** or **SHANK-PAINTER**, in a ship, is a short chain fastened under the foremast-shrouds, by a bolt, to the ship's sides, having at the other end a rope fastened to it. On this shank-painter the whole weight of the aft part of the anchor rests when it lies by the ship's side. The rope, by which it is hauled up, is made fast about a timber-head.

**SHANK,** in the manege, that part of a horse's fore leg which lies between the knee and the fetlock.

**SHANKER,** or **CHANCRE**, in medicine, a malignant ulcer, usually occasioned by some venereal disorder. See MEDICINE.

**SHANK-PAINTER.** See SHANK.

**SHANNON**, the largest river in Ireland, and one of the finest in the British dominions, not only on account of its lengthened course of 200 miles, but also of its great depth in most places, and the gentleness of its current, by which it might be made exceedingly serviceable to the improvement of the country, the communication of its inhabitants, and consequently the promoting of inland trade. But the peculiar prerogative of the Shannon is its situation, running from north to south and separating the province of Connaught from Leinster and Munster, and

of consequence dividing the greatest part of Ireland into what lies on the east, and that on the west of the river; watering in its passage the valuable county of Leitrim, the plentiful shire of Roscommon, the fruitful county of Galway, and the pleasant county of Clare; the small but fine shire of Longford, the King's county, and fertile county of Meath, in Leinster, the populous county of Tipperary, the spacious shire of Limerick, and the rough but pleasant county of Kerry, in Munster; visiting ten counties in its passage, and having on its banks the following remarkable places, viz. Leitrim, Jamestown, Lanesborough, Athlone, Clonfert, Killaloe, and Limerick; at twenty leagues below the latter it spreads gradually several miles in extent, so that some have considered its expansion as a lake. It at last joins its waters to the sea, being navigable all that way for the largest vessels.

**SHANSKRIT**, the language of the Brahmins of Hindostan. See PHILOLOGY.

**SHAPE**, *v. a. & n.s.* { *Preter.* shaped; *part.*

**SHAPELESS**, *adj.* } *pass.* shaped and shapen. Sax. *cyppan*; Belg. *scheppen*; Goth. and Swed. *skupa*. To form; mould with respect to external dimensions; regulate; image: the noun substantive and adjective corresponding.

I was shapen in iniquity, and in sin did my mother conceive me.

*Psalm li. 5.*

The shapes of the locusts were like unto horses prepared for battle.

*Rev. ix. 7.*

I, that am not shaped for sportive tricks,  
Nor made to court an amorous looking-glass,  
I, that am rudely stamp'd, and want love's majesty,  
To strut before a wanton ambling nymph.

Shakspeare. *Richard III.*

Lovers and madmen have their seething brains,  
Such shaping fantasies that apprehend  
More than cool reason ever comprehend.

Shakspeare.

He beat me grievously in the shape of a woman; for in the shape of a man, master Brook, I fear not Goliah with a weaver's beam.

*Id.*

He is deformed, crooked, old, and sere;  
Ill faced, worse bodied, shapeless every where.

*Id.*

Mr. Candish, when without hope, and ready to shape his course by the east homewards, met a ship which came from the Philippines.

Raleigh.

Thrice had I loved thee,  
Before I knew thy face or name,  
So in a voice, so in a shapeless flame,  
Angels affect us oft, and worshipped be.

*Donne.*

Those nature hath shaped with a great head, narrow breast, and shoulders sticking out, seem much inclined to a consumption.

*Harvey.*

To the stream, when neither friends, nor force,  
Nor speed, nor art avail, he shapes his course.

*Denham.*

The other shape,

If shape it may be called, that shape had none  
Distinguishable in member, joint, or limb.

*Milton.*

When fancy hath formed and shaped the perfectest idea of blessedness, our own more happy experiences of greater must disabuse us.

*Boyle.*

In vegetables and animals the shape we most fix on,  
and are most led by.

*Locke.*

No shapemsmith yet set up and drove a trade,  
To mend the work that providence had made.

*Garth.*

First a charming shape enslaved me,  
An eye then gave the fatal stroke;

Till by her wit Corinna saved me,  
And all my former fitters broke. *Addison.*  
Mature the virgin was, of Egypt's race ;  
Grace shaped her limbs, and beauty decked her face. *Prior.*

Charmed by their eyes, their manners I acquire,  
And shape my foolishness to their desire. *Id.*

Now the victor stretched his eager hand,  
Where the tall nothing stood, or seemed to stand ;  
A shapeless shade, it melted from his sight,  
Like forms in clouds, or visions of the night ! *Pope.*

Fathers and mothers, friends and relations, seem  
to have no other wish towards the little girl, but  
that she may have a fair skin, a fine shape, dress  
well, and dance to admiration. *Law.*

SHAPINSHAY, one of the Orkney Islands, lying about three miles north of Pomona, or Mainland. It is about seven miles long from east to west, and five broad from north to south, resembling the form of a cross. Along the whole coast the surface is low, pretty level, and the soil fertile in oats, barley, and grass; although agriculture is not improved. Towards the middle the land is higher; and, having never been cultivated, is fit only for pasture. Relics of ancient superstition appear in the Standing stone of Shapinshay, and the Black Stone of Odin. A small bay is named Grucula, which, tradition says, is from one of the celebrated Agricola's ships having been stranded in it, during a storm, when he sailed round the island. In farther proof of this, Roman coins have been lately found near it. There are several subterraneous habitations called Picts' Houses. The only harbour in the island is Elwick, and it is an excellent one. It has from four to six fathoms water, over a bottom of hard clay covered with sand. On the west it has a fine beach. About eighty boats are employed in fishing. Kelp is also manufactured. Long.  $0^{\circ} 28'$  E. of Edinburgh, lat.  $58^{\circ} 55' N.$

SHAPOUR, a ruined and once celebrated city, at the end of the valley of Kazeroon, in the province of Fars, Persia. It is said to have existed prior to the time of Alexander the Great, and to have been destroyed by him. It was rebuilt with augmented splendor by Sapor, who made it his capital. Though deserted, the breadth and circumference of the ramparts, and the remains of some public buildings, show its former extent and magnificence. It is situated under a range of mountains, on the banks of a small rapid river, and in a wild romantic spot. The hills in the immediate vicinity appear to have been formerly fortified; and an extraordinary cavern, farther up the river, has given rise to many fabulous stories. Eighteen miles west of Kazeroon.

SHARD, *n. s.* Sax. *feārd*; Frisick *schuerde*. A fragment of an earthen vessel. Used by Spenser for a frith or strait.

Upon that shore he spied Atin stand,  
There by his master left, when late he fared  
In Phedria's fleet bark, o'er that perilous shard. *Faerie Queene.*

Often shall we find  
The sharded beetle in the safer hold,  
Than is the full winged eagle. *Shakspeare. Cymbeline.*

For charitable prayers,  
Shards, flints, and pebbles, should be thrown on her ;  
Yet here she is allowed her virgin chants,  
Her maiden strewments. *Id. Hamlet*

Ere to black Hecat's summons  
The shardborn beetle, with his drowsy hums,  
Hath rung night's yawning peal, there shall be done  
A deed of dreadful note. *Shakspeare.*

Shards or mallows for the pot  
Keep the loosened body sound. *Dryden. Horace.*

SHARE, <i>v. a., v. n. &amp; n. s.</i>	Saxon <i>reeapan,</i>
SHARE'BONE, <i>n. s.</i>	<i>reyan.</i> To divide;
SHA'RER.	<i>part among many;</i> partake with others; cut; separate; have part : the noun substantives corresponding.

The captain, half of whose soldiers are dead, and the other quarter never mustered or seen, comes shortly to demand payment of his whole account; where, by good means of some great ones, and privy sharings with the officers of other some, he receiveth his debt. *Spenser on Ireland.*

Good fellows all  
The latest of my wealth I'll share among you. *Shakspeare.*

Any man may take trial of his fortune, provided he acknowledge the lord's right, by sharing out unto him a toll. *Carew.*

Most it seemed the French king to import,  
As sharer in his daughter's injury. *Daniel's Civil War.*

In vain does valour bleed,  
While avarice and rapine share the land. *Milton.*

With swift wheel reverse deep entering shared  
All his right side. *Id.*

If ever just man, that now pines with want,  
Had but a moderate and besceming share  
Of that which lewdly-pampered luxury  
Now heaps upon some with vast excess. *Id.*

The subdued territory was divided into greater and smaller shares, besides that reserved to the prince. *Temple.*

Well may he then to you his cares impart,  
And share his burden where he shares his heart. *Dryden.*

Waved by the wanton winds his banner flies,  
All maiden white, and shared the people's eyes. *Id.*  
Scalp, face, and shoulders, the keen steel divides,  
And the shared visage hangs on equal sides. *Id.*

I'll give you arms ; burn, ravish, and destroy :  
For my own share one beauty I design ;  
Engage your honours that she shall be mine. *Id.*

Great cities shall with walls be compassed round,  
And sharpened shares shall vex the fruitful ground. *Id.*

People not allowed to be sharers with their companions in good fortune, will hardly agree to be sharers in bad. *L'Estrange.*

You must have known it.  
—Indeed I did, then favoured by the king,  
And by that means a sharer in the secret. *Rowe.*

Though the weight of a falsehood would be too heavy for one to bear, it grows light in their imaginations when it is shared among many. *Addison's Spectator.*

The youths have equal share  
In Marcia's wishes, and divide their sister. *Id. Cato.*

An overgrown estate falling into the hands of one that has many children, it is broken into so many portions as render the sharers rich enough. *Addison.*

In the primitive times the advantage of priesthood was equally shared among all the order, and none of that character had any superiority. *Collier.*

If, by taking on himself human nature at large, he hath a compassionate and tender sense of the infirmities of mankind in general, he must needs, in a peculiar manner, feel and commiserate the infirmities of the poor, in which he himself was so eminent a sharer.

*Atterbury.*

The cartilage bracing together the two ossa pubis, or sharebones, Bartholine saith, is twice thicker and laxer in women than men.

*Derham.*

In poets as true genius is but rare,  
True taste as seldom is the critick's share.

*Pope.*

I suffer many things as an author militant, whereof in your days of probation you have been a sharer.

*Id. to Swift.*

This is Dutch partnership, to share in all our beneficial bargains, and exclude us wholly from theirs.

*Swift.*

He who doth not perform that part assigned him is a very mischievous member of the publick; because he takes his share of the profit, and yet leaves his share of the burden to be born by others.

*Id.*

Suppose I share my fortune equally between my children and a stranger, will that unite them?

*Id.*

Incumbent o'er the shining share  
The master leans, removes the obstructive clay.

*Thomson.*

By being desirous that every one should have their full share of the favours of God, they would not only be content, but glad, to see one another happy in the little enjoyments of this transitory life.

*Law.*

For clay the coulter is long and bending, and the share narrow.

*Mortimer.*

These, although they bear a share in the discharge, yet have different offices in the composition.

*Browne's Vulgar Errors.*

SHARE OF A PLOUGH, that part which cuts the ground; the extremity forwards being covered with a sharp pointed iron, called the point of the share, and the end of the wood behind the tail of the share. See PLOUGH and RURAL ECONOMY.

SHARK, n. s., v. a. & v. n. Lat. *charcharius*, of Gr. *χαράσσω*. A voracious sea fish; a greedy fellow; trick; fraud: to pick up; devour; to play the petty thief.

Young Fontinbras,  
Of unimproved mettle, hot and full,  
Hath in the skirts of Norway, here and there,  
Sharked up a list of landless resolute.

*Shakspeare. Hamlet.*

The fly leads a lazy, voluptuous, scandalous, sharking life, hateful wherever she comes.

*L'Estrange.*

There are cheats by natural inclination as well as by corruption; nature taught this boy to shark, not discipline.

*Id.*

David's messengers are sent back to him, like so many sharks and runnagates, only for endeavouring to compliment an ill nature out of itself, and seeking 'hat by petition which they might have commanded by their sword.

*South.*

Wretches who live upon the shark, and other men's sins, the common poisoners of youth, equally desperate in their fortunes and their manners, and getting their very bread by the damnation of souls.

*Id.*

The old generous English spirit, which heretofore made this nation so great in the eyes of all the world, seems utterly extinct; and we are degenerated into a mean, sharking, fallacious, undermining converse; there being a snare and a trap almost in every word we hear, and every action we see.

*Id.*

His jaws horrifick armed with threefold fate,  
The direful shark.

*Thomson's Summer.*

And such things as the entrails and the brains  
Regaled two sharks, who followed o'er the billows—  
The sailors ate the rest of poor Pedrillo.

*Byron.*

SHARK, in ichthyology. See SQUALUS.

SHARON, in ancient geography, the name of three cantons of Palestine. The first lay between Mount Tabor and the sea of Tiberias; the second between the city of Cæsarea of Palestine, and Joppa; and the third lay beyond Jordan. To give an idea of perfect beauty, Isaiah said, the glory of Lebanon and the beauty of Carmel must be joined to the abundance of Sharon. Isaiah xxxiii. 9; xxxi. 2. The plains of Sharon are of vast extent; and, when surveyed by the abbe Mariti a few years ago, they were sown with cucumbers; and he says that such a number is annually produced as not only to supply the whole neighbourhood, but all the coasts of Cyprus and the city of Damietta. 4. In the middle of the plain, between Arsus and Lydda, rises a small mountain, upon the ridge of which there is a village called Sharon, from the ancient city whose king was conquered by Josuah.

SHARP, adj., n. s., v. a., ) Saxon *rceap*;

SHARPEN, v. a. [ & v. n. Teut. *scharff*; Dan.

SHARPER, n. s. *skarp*. Acute; keen;

SHARPLY, adv. { cutting; piercing;

SHARPNESS, n. s. terminating in a

SHARPSET, adj. point or edge:

SHARP-SIGHTED, hence witty; inge-

SHARP-VISAGED. nious; acute of

mind; attentive; vigilant; quick; sour, but not austere; shrill of sound; painful; afflictive; emaciated; lean: a sharp or acute sound; a pointed weapon: to make keen: play thievish tricks: to sharpen is also to make sharp or keen; give edge or point to; make quick, ingenious, &c.; make sour: a 'sharper' is a low, tricky fellow: the adverb and noun substantive following correspond with sharp, as an adjective: sharp-set is hungry; ravenous; eager: sharp-sighted and visaged explain themselves.

The Israelites went down to the Philistines, to sharpen every man his share and his coulter.

*1 Sam. xiii. 20.*

Mine enemy sharpeneth his eyes upon me.

*Job xvi. 9.*

Thy tongue deviseth mischiefs, like a sharp razor, working deceitfully.

*Ps. lli. 2.*

Overmuch quickness of wit, either given by nature, or sharpened by study, doth not commonly bring greatest learning, best manners, or happiest life in the end.

*Aschan.*

Now as fine in his apparel as if he would make me in love with a cloak, and verse for verse with the sharpest witted lover in Arcadia.

*Sidney.*

Basilius forced her to stay, though with much ado, she being sharp-set upon the fulfilling of a shrewd office, in overlooking Philoclea.

*Id.*

Palladius neither suffering us nor himself to take in hand the party till the afternoon; when we were to fight in troops, nor differing otherwise from earnest, but that the sharpness of the weapons was taken away.

*Id.*

So we, if children young diseased we find,  
Anoint with sweets the vessel's foremost parts,  
To make them taste the potions sharp we give;  
They drink deceived, and so deceived they live.

*Spenser.*

They are more sharply to be chastised and reformed

than the rude Irish, which, being very wild at the first, are now become more civil. *Id.*

Sharp and subtle discourses procure very great applause; but, being laid in the balance with that which sound experience plainly delivereth, they are overweighed. *Hooker.*

The weaker their helps are, the more their need is to sharpen the edge of their own industry. *Id.*

If the understanding or faculty of the soul be like unto bodily sight, not of equal sharpness in all; what can be more convenient than that, even as the dark-sighted man is directed by the clear about things visible, so likewise, in matters of deeper discourse, the wise in heart doth shew the simple where his way lieth. *Id.*

He caused his father's friends to be cruelly tortured; grieving to see them live to whom he was so much behoden, and therefore rewarded them with such sharp payment. *Knolles.*

She hath tied

Sharp toothed unkindness like a vulture here. *Shakspeare.*

If he should intend his voyage towards my wife, I would turn her loose to him; and what he gets more of her than sharp words, let it lie on my head. *Id.*

There, gentle Hermia, may I marry thee: And to that place the sharp Athenian law Cannot pursue us. *Id.*

My falcon now is sharp and passing empty, And, till she stoop, she must not be full gorged; For then she never looks upon her lure. *Id.*

That she may feel

How sharper than a serpent's tooth it is, To have a thankless child. *Id. King Lear.*

It is the lark that sings so out of tune, Straining hard discords and unpleasing sharps. *Shakspeare.*

Epicurean cooks

Sharpen with cloyless sauce his appetite. *Id.*

There's gold for thee;

Thou must not take my former sharpness ill, I will employ thee back again. *Id.*

There was seen some miles in the sea a great pillar of light, not sharp, but in form of a column or cylinder, rising a great way up towards heaven. *Bacon.*

In whistling you contract the mouth, and, to make it more sharp, men use their finger. *Id. Natural History.*

Let one whistle at the one end of a trunk, and hold your ear at the other, and the sound strikes so sharp as you can scarce endure it. *Bacon.*

The grating of a saw, when sharpened, offends so much, as it setteth the teeth on edge. *Id.*

You contract your eye when you would see sharply; and erect your ear when you would hear attentively. *Id.*

If we had nought but sense, each living wight Which we call brutes, would be more sharp than we. *Davies.*

As the sharpest eye discerneth nought, Except the sun-beams in the air do shine; So the best soul with her reflecting thought, Sees not herself without some light divine. *Id.*

If she were the body's quality, Then would she be with it sick, maimed, and blind; But we perceive where these privations be,

An healthy, perfect, and sharp-sighted mind. *Id.*

At the arrival of the English ambassadors, the soldiers were sharply assailed with wants. *Hayward.*

The mind and memory are more sharply exercised in comprehending another man's things than our own. *Ben Jonson.*

Whom the whetstone sharpes to eat, They cry, millstones are good meat. *Id.*

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Force consisteth in the roundings and risings of the work, according as the limbs do more or less require it; so as the beholder shall spy no sharpness in the bordering lines. *Wotton.*

The instances you mention are the strongest and sharpest that can be urged. *Digby.*

Your majesty's clear and sharp-sighted judgment has as good a title to give law in matters of this nature as in any other. *Denham.*

I am not so sharp-sighted as those who have discerned this rebellion contriving from the death of queen Elizabeth. *Clarendon.*

Their embryon atoms Light armed or heavy, sharp, smooth, light, or slow. *Milton.*

The sharp desire I had Of tasting. *Id.*

Their piety feign'd In sharp contest of battle found no aid. *Id.*

Death becomes

His final remedy; and after life Tried in sharp tribulation, and refined By faith and faithful works. *Id. Paradise Lost.*

His visage drawn he felt to sharp and spare. *Milton.*

The squadron bright, sharp'ning in moored horns Their phalanx. *Id.*

The air sharpened his visual ray To objects distant far. *Id.*

The Welsh that inhabit the mountains are commonly sharp-visaged. *Hale's Origin of Mankind.*

It is a very small comfort that a plain man, lying under a sharp fit of the stone, receives from this sentence. *Tillotson.*

Such an assurance as will sharpen men's desires, and quicken their endeavours for obtaining a lesser good, ought to inspire men with more vigour in pursuit of what is greater. *Id.*

It is so much the firmer, by how much broader the bottom, and sharper the top. *Temple.*

Provoking sweat extremely, and taking away all sharpness from whatever you put in, must be of good effect in the cure of the gout. *Id.*

To come near the point and draw unto a sharper angle, they do not only speak and practise truth, but really desire its enlargement. *Browne's Vulgar Errors.*

In shipping such as this the Irish kern, And untaught Indian, on the stream did glide, Ere sharp-keeled boats to stem the flood did learn, Or fin-like oars did spread from either side. *Dryden.*

Sharp to the world, but thoughtless of renown, They plot not on the stage, but on the town. *Id.*

To sharp-eyed reason this would seem untrue; But reason through love's false optics view. *Id.*

Sharp tasted citrons Median climes produce; Bitter the rind, but generous is the juice. *Id.*

Cease contention: be thy words severe, Sharp as he merits; but the sword forbear. *Id.*

No: 'tis resistance that inflames desire; Sharpens the darts of love, and blows the fire. *Dryden.*

Ere ten moons had sharpened either horn, To crown their bliss a lovely boy was born. *Id.*

The sharpness of his satire, next to himself, falls most heavily on his friends. *Id.*

Nothing so fierce but love will soften, nothing so sharp-sighted in other matters but it throws a mist before the eyes on't. *L'Estrange.*

I live upon what's my own; whereas your scandalous life is only cheating or sharpening one half of the year, and starving the other. *Id.*

Sharpers, as pikes, prey upon their own kind. *Id.*

Our senses are sharp-set on pleasures. *Id.*

For the various modulation of the voice, the upper end of the windpipe is endued with several cartilages to contract or dilate it, as we would have our voice flat or sharp.

*Ray.*

The windpipe is continually moistened with a glutinous humour, issuing out of small glandules in its inner coat, to fence it against the sharp air.

*Id.*

With edged grooving tools they cut down and smoothen away the exuberances left by the sharp pointed grooving tools, and bring the work into a perfect shape.

*Moxon.*

My haughty soul would swell,  
Sharpen each word, and threaten in my eyes.

*Smith.*

This is a subject of which it is hard to speak without satirical sharpness, and particular reflections on many churches of christians.

*Sprat.*

How often may we meet with those who are one while courteous, but within a small time after are so supercilious, sharp, troublesome, fierce, and exceptious, that they are not only short of the true character of friendship, but become the very sores and burdens of society!

*South.*

It may contribute to his misery, heighten the anguish, and sharpen the sting of conscience, and so add fury to the everlasting flames, when he shall reflect upon the abuse of wealth and greatness.

*Id.*

Not a single death only that then attended this profession; but the terror and sharpness of it was redoubled in the manner and circumstances.

*Id.*

There is nothing makes men sharper, and sets their hands and wits more at work, than want.

*Addison on Italy.*

Her nails are sharpened into pointed claws;  
Her hands bear half their weight, and turn to paws.

*Addison.*

The son returned with strength of constitution, sharpness of understanding, and skill in languages.

*Id.*

Is a man bound to look out sharp to plague himself, and to take care that he slips no opportunity of being unhappy?

*Collier.*

If butchers had but the manners to go to sharpes, gentlemen would be contented with a rubber at cuffs.

*Id.*

He should retrench what he lost to sharpers, and spent upon puppet-plays, to apply it to that use.

*Arbuthnot.*

Nor here the sun's meridian rays had power,  
Nor wind sharp piercing, nor the rushing shower,  
The verdant arch so close its texture kept.

*Pope's Odyssey.*

I only wear it in a land of Hectors,  
Thieves, supercargoes, sharpers, and directors.

*Pope.*

A comedy of Johnson's, not Ben, held seven nights; for the town is sharp-set on new plays.

*Id.*

A clergyman, established in a competent living, is not under the necessity of being so sharp and exacting.

*Swift.*

Many other things belong to the material world wherein the sharpest philosophers have never yet arrived at clear and distinct ideas.

*Watts.*

Different simple ideas are sometimes expressed by the same word, as sweet and sharp are applied to the objects of hearing and tasting.

*Id.*

There is a sharpness in vinegar, and there is a sharpness in pain, in sorrow, and in reproach; there is a sharp eye, a sharp wit, and a sharp sword: but there is not one of these several sharpnesses the same as another of them; and a sharp east wind is different from them all.

*Id. Logick.*

SHARP (Abraham), an eminent mathematician, mechanist, and astronomer, descended from an

ancient family at Little Horton, near Bradford, in the West Riding of Yorkshire, where he was born about 1651. He was put apprentice to a merchant at Manchester; but his genius led him strongly to the study of mathematics, both theoretical and practical. By the consent, therefore, of his master, he quitted business and removed to Liverpool, where he studied mathematics, astronomy, &c.; and where, for a subsistence, he opened a school, and taught writing and accounts, &c. He had not been long at Liverpool when he fell in with a merchant from London, in whose house the astronomer Mr. Flamsteed then lodged. To become acquainted with this eminent man, Mr. Sharp engaged with the merchant as a book-keeper, and soon contracted an intimate friendship with Mr. Flamsteed, by whose interest and recommendation he obtained a more profitable employment in the dock-yard at Chatham; where he continued till his friend and patron, knowing his great merit in astronomy and mechanics, called him to his assistance, in contriving, adapting, and fitting up the astronomical apparatus in the royal Observatory at Greenwich, which had been recently built, about 1676. He was principally employed in the construction of the mural arch; which in fourteen months he finished greatly to the satisfaction of Mr. Flamsteed. According to Mr. Smeaton, this was the first good instrument of the kind; and Mr. Sharp the first artist who cut accurate divisions upon astronomical instruments. When it was constructed, Mr. Flamsteed was thirty and Mr. Sharp twenty-five years of age. These two friends continued together for some time, making observations on the meridional zenith distances of the fixed stars, sun, moon, and planets, with the times of their transits over the meridian; also the diameters of the sun and moon, and their eclipses, and those of Jupiter's satellites, the variation of the compass, &c. Mr. Sharp assisted Flamsteed also in making a catalogue of nearly 3000 fixed stars, with their longitudes and magnitudes, their right ascensions and polar distances, with the variations of the same while they change their longitude by one degree. See ASTRONOMY. But from the fatigue of continually observing the stars at night, in a cold thin air, he was reduced to a bad state of health; for the recovery of which he retired to his house at Horton; where, on his recovery, he fitted up an observatory of his own; having first made an elegant and curious engine for turning all kinds of work in wood or brass, with a mandril for turning irregular figures, as ovals, roses, wreathed pillars, &c. Besides these, he made most of the tools used by joiners, clock-makers, opticians, mathematical instrument makers, &c. The limbs of arcs of his large equatorial instrument, sextant, quadrant, &c., he graduated with the nicest accuracy, by diagonal divisions into degrees and minutes. The telescopes he made use of were all of his own making, and the lenses ground, figured, and adjusted with his own hands. It was at this time that he assisted Mr. Flamsteed in calculating most of the tables in vol. 2 of his Historia Cælestis, and executed the curious drawings of the charts of all the constellations visible in our hemisphere, with the still

more excellent drawings of the planispheres both of the northern and southern constellations. And, though these were sent to be engraved at Amsterdam by a masterly hand, yet the originals far exceeded the engravings in point of beauty and elegance: these were published by Mr. Flamsteed, and both copies may be seen at Horton. The mathematician, says Dr. Hutton, meets with something extraordinary in Sharp's elaborate treatise of Geometry Improved (in 4to. 1717, signed A. S. Philomath.): 1st, by a large and accurate table of segments of circles, its construction and various uses in the solution of several difficult problems, with compendious tables for finding a true proportional part; and their use in these or any other tables exemplified in making logarithms, or their natural numbers, to sixty places of figures; there being a table of them for all primes to 1100, true to sixty-one figures. 2dly, His concise treatise of Polyedra, or Solid Bodies of many Bases, both the regular ones and others: to which are added twelve new ones, with various methods of forming them and their exact dimensions in surds, or species, and in numbers; illustrated with a variety of copper-plates, neatly engraved by his own hands. Also the models of these polyedra he cut out in box-wood with amazing neatness and accuracy. Indeed few or none of the mathematical instrument makers could exceed him, in exactly graduating or neatly engraving any mathematical or astronomical instrument, as may be seen in the equatorial instrument above-mentioned, or in his sextants, quadrants, and dials of various sorts; also in a curious armillary sphere, which, beside the common properties, has moveable circles, &c., for exhibiting and resolving all spherical triangles; also his double sector, and many other instruments, all contrived, graduated, and finished, in a most elegant manner, by himself. In short, he possessed at once a remarkably clear head for contriving, and an extraordinary hand for executing, any thing, not only in mechanics, but likewise in drawing, writing, and making the most exact and beautiful schemes or figures in all his calculations and geometrical constructions. The quadrature of the circle was undertaken by him for his own private amusement in 1699, deduced from two different series, by which the truth of it was proved to seventy-two places of figures; as may be seen in the introduction to Sherwin's Tables of Logarithms. In the same book may also be seen his ingenious improvements on the making of logarithms, and the constructing of the natural sines, tangents, and secants. He also calculated the natural and logarithmic sines, tangents, and secants, to every second in the first minute of the quadrant; the laborious investigation of which may be seen in the archives of the Royal Society, exhibiting his very neat and accurate manner of writing and arranging his figures, not to be equalled by the best penman now living. Mr. Sharp kept up a correspondence by letters with most of the eminent mathematicians and astronomers of his time, as Mr. Flamsteed, Sir Isaac Newton, Dr. Halley, Dr. Wallis, Mr. Hodgeson, Mr. Sherwin, &c., the answers to which letters are all written upon the backs, or empty spaces, of the letters

he received, in a short hand of his own contrivance. From a great variety of letters (of which a large chestful remain with his friends) from these and many other celebrated mathematicians, it is evident that Mr. Sharp spared neither pains nor time to promote real science. Indeed, being one of the most accurate and indefatigable computers that ever existed, he was for many years the common resource for Mr. Flamsteed, Sir Jonas Moore, Dr. Halley, and others, in all sorts of troublesome and delicate calculations. Mr. Sharp continued all his life a bachelor, and spent his time as recluse as a hermit. He was of a middle stature, but very thin, being of a weakly constitution. He was remarkably feeble the last three or four years of his life. He died on the 18th of July 1742, aged ninety-one. In his retirement, at Little Horton, he employed four or five rooms or apartments in his house for different purposes, into which none of his family could enter at any time without his permission. He duly attended the dissenting chapel at Bradford, of which he was member, every Sunday; when he took care to be provided with plenty of halfpence, which he very charitably suffered to be taken singly out of his hand, held behind him during his walk to the chapel, by a number of poor people who followed him, without his ever looking back, or asking a question. Mr. Sharp was very irregular as to his meals, and remarkably sparing in his diet; so very much so, indeed, that the breakfast, dinner, and supper, have often remained untouched by him, when the servant has gone to remove what was left—so deeply engaged had he been in calculations.

SHARP (James), archbishop of St. Andrews, was born of a good family in Banffshire in 1618. He devoted himself very early to the church, and was educated for that purpose in the University of Aberdeen. When the solemn league and covenant was framed, in 1638, the learned men in that seminary, and young Sharp in particular, declared themselves decidedly against it. To avoid the insults and indignities to which he was subjected, in consequence of this conduct, he retired to England, where he contracted an acquaintance with some of the most celebrated divines in that country. At the commencement of the civil wars he returned to Scotland. During his journey thither, he accidentally met with Lord Oxenford, who, pleased with his conversation, invited him to his house. While he resided there, he became known to the earl of Rothes, who procured him a professorship at St. Andrew's. By the interest of the earl of Crawford he was soon after appointed minister of Crail. Sharp had always inclined to the cause of royalty, and had for some time kept up a correspondence with his exiled prince. After the death of the protector he began to declare himself more openly, and seems to have enjoyed a great share of the confidence of Monk, who was at that time planning the Restoration of Charles II. When that general marched to London, the presbyterians sent Sharp to attend him to support their interests. At the request of general Monk and the chief presbyterians in Scotland, Mr. Sharp was sent over to the king at Breda to procure from him, if possible, the establishment of

Presbyterianism. On his return, he assured his friends that 'he had found the king very affectionate to Scotland, and resolved not to wrong the settled government of the church; but he apprehended they were mistaken who went about to establish the Presbyterian government.' Charles was soon after restored without any terms. All the laws passed in Scotland since 1633 were repealed; the king and his ministers resolved at all hazards to restore prelacy. Mr. Sharp, who had been commissioned by the Scottish Presbyterians to manage their interests with the king, was prevailed upon to abandon the party; and, as a reward for his compliance, he was made archbishop of St. Andrew's. This conduct rendered him very odious in Scotland; he was accused of treachery and perfidy, and reproached by his old friends as a traitor and a renegado. The cruelties which were afterwards committed, which have been denominated absurd and wanton by one party, while by another they were considered as the necessary punishment of absolute rebellion, were in a great measure imputed to the archbishop, and rendered him still more detested. It may be well doubted whether these accusations were to their full intent well founded, though they will continue to be believed as long as any portion of the party and spirit of that age remains. They are the more easily credited, in that, having been formerly of the Presbyterian party, he might thence be induced, after forsaking them, to treat them with severity. He is accused of having, after the route at Pentland Hill, received an order from the king to stop the executions, and of having kept it for some time before he produced it to the council. There was one Mitchell, a preacher, who had formed the design of taking vengeance for these cruelties by assassinating the archbishop. He fired a pistol at him as he was sitting in his coach; but the bishop of Orkney, lifting up his hand at the moment, intercepted the ball. Though this happened in the midst of Edinburgh, the primate was so much detested, that nobody stopped the assassin; who, having walked leisurely home, and thrown off his disguise, returned, and mixed unsuspected with the crowd. Some years after, the archbishop observing a man eyeing him with keenness, suspected that he was the assassin, and ordered him to be brought before him. It was Mitchell. Two loaded pistols were found in his pocket. The primate offered him a pardon if he would confess the crime; the man complied; but Sharp, regardless of his promise, conducted him to the council. The council also gave him a solemn promise of pardon, if he would confess his guilt and discover his accomplices. They were much disappointed to hear that only one man was privy to his purpose, who was since dead. Mitchell was then brought before a court of justice, and ordered to make a third confession, which he refused. He was imprisoned for several years, and then tried. His own confession was urged against him. It was in vain for him to plead the illegality of that evidence, and to appeal to the promise of pardon previously given. The council took an oath that they had given no such promise; and Mitchell was condemned. Lauderdale, who at that time governed Scotland, would have pardoned him, but the pri-

mate insisted on his execution. Mitchell was accordingly executed. Sharp had a servant, one Carmichael, who by his cruelty had rendered himself particularly odious to the zealots. Nine men formed the resolution of waylaying him in Magus muir, about three miles from St. Andrew's. While they were waiting for this man, the primate himself appeared with very few attendants. This they looked upon as a declaration of heaven in their favor; and calling out 'the Lord has delivered him into hands,' they ran up to the carriage. They fired at him without effect; a circumstance which was afterwards imputed to magic. They then despatched him with their swords, regardless of the tears and intreaties of his daughter, who accompanied him. Thus fell archbishop Sharp, whose memory is even yet detested by the people of Scotland. His abilities were certainly good, and in the early part of his life he appears with honor and dignity; but his conduct afterwards was censured as cruel and insincere. His treatment of Mitchell was infamous, unjust, and vindictive. That he contributed greatly to the measures adopted against the Presbyterians is certain. That they were cruel and impolitic may be proved; nor did their effects cease with the measures themselves. The unheard-of cruelties exercised by the ministers of Charles II., against the adherents of the covenant, raised such a flame of enthusiasm and bigotry, as remained long unextinguished. It must be granted, at the same time, that the very essence of faction and insolent rebellion was combined with the religious prejudices of the covenanters, such as no government could tolerate; though it might have been opposed by happier means, and with better temper.

**SHARP** (John), D. D., archbishop of York. was descended from the Sharps of Little Horton, a family of Bradford Dale in Yorkshire; and was son of an eminent tradesman of Bradford, where he was born in 1644. He was educated at Cambridge, and in 1667 entered into orders, and became chaplain to Sir Henceage Finch, then attorney-general. In 1672 he was appointed archdeacon of Berkshire; in 1675 a prebendary in the cathedral church of Norwich; and 1676, rector of St. Bartholomew, London. In 1681 he was, by the interest of Sir Henceage Finch, then lord chancellor, made dean of Norwich; but in 1686 was suspended for vindicating the doctrine of the church of England in opposition to Popery. In 1688 he was sworn chaplain to king James II., and was also chaplain to king Charles II., and attended at the coronation of king James II. In 1689 he was declared dean of Canterbury; but always refused to fill up any of the vacancies made by the deprived bishops. Upon the death of Dr. Lamplugh he was promoted to the see of York. In 1702 he preached the sermon at the coronation of queen Anne; and was sworn of the privy council, and made lord-almoner to her majesty. He died at Bath in 1713; and was interred in the cathedral of York, where a monument is erected to his memory. His sermons, which were collected after his death, and published in 7 vols. 8vo., are justly admired.

**SHARP** (Gregory). See **SHARPE**.

**SHARP** (Granville), a modern English phi-

Ianthropist of considerable learning, was the son of archbishop Sharp, and born in 1743. He was educated for the bar, but obtained a place in the ordnance office, which he resigned at the commencement of the American war, the principles of which he did not approve. He now for the rest of his life resided in the temple, and led a life of private study. He became known to the public by his spirited defence of a poor negro named Somerset, who, having been brought to England by his master, was turned into the streets in a fit of sickness. When, by the charity of Mr. Sharp and his friends he had been restored to health, he was claimed again as property. The result was a series of law proceedings, which not only cleared Somerset from his tyrant, but determined that slavery could not exist in Great Britain. Having succeeded in this case, he interested himself in the condition of others, and at his own expense sent a number of wandering negroes to Sierra Leone, and soon after became the institutor of the society for the abolition of the slave trade. He was likewise the warm advocate of parliamentary reform, in support of which he published A Declaration of the People's Natural Right to a Share in the Legislature. This worthy individual, who attained the age of seventy-nine, died July 6th, 1813, active in benevolence to the last. His library was very extensive, and he possessed a curious collection of Bibles, which he presented to the British and Foreign Bible Society. His principal works are, Remarks on the Uses of the Definitive Article in the Greek Testament, &c., to which is added a plain matter of fact Argument for the Divinity of Christ, 1798, 8vo.; A Short Treatise on the English tongue; Remarks on the prophecies; Treatises on the Slave Trade, on Duelling, on the Law of Nature and Principles of Action in Man; Tracts on the Hebrew Language; Illustrations of the sixty-eighth Psalm, &c. In regard to most of these productions, the impression is likely to be very temporary; but, as connected with standing controversy, the Remarks on the Definitive Article may probably form a lasting manual in defence of the doctrine of the divinity of Christ, against the arguments of the Unitarians.

SHARP (William), a modern engraver of great skill, was the son of a gun-maker in the Minories, where he was born January 29th, 1740. His father, observing his early taste for drawing, apprenticed him to Mr. Longmate, an artist who practised what is technically termed bright engraving. At the expiration of his indentures, Sharp, then very young, married a Frenchwoman, and commenced business on his own account in Bartholomew Lane. Here he soon found himself capable of greater things than the engraving of dog-collars and door-plates, and resolutely applied himself to the higher branches of his art. One of his first essays was a plate of Hector, an old lion then in the Tower, from a drawing by himself. In 1782 he removed to the neighbourhood of Vauxhall; but, increasing in business and reputation, soon after took a larger residence in Charles Street, Middlesex Hospital. He became about this period a convert to the reveries of Mesmer and Emanuel Swedenborg, then to those of Richard Brothers,

of whom he engraved two separate plates, lest one should be insufficient to produce the requisite number of impressions which would be called for on the arrival of the predicted Millennium. When Brothers was incarcerated in a mad-house, Mr. Sharp attached himself to Joanna Southcote, of whose pretensions he continued a staunch supporter to the day of his death, although he survived considerably the object of his credulity, whom he persisted in affirming to be only in a trance. From London Mr. Sharp latterly resided at Chiswick, where he died of a dropsy in the chest, July 25th, 1824. He was at one time a member of the Society for Constitutional Information, and narrowly escaped being put on his trial for high treason, with Messrs. Horne Tooke, Holcroft, and Thelwall. He was arrested by order of government, and examined before the privy council, when it is said the naïveté of his answers and behaviour fully convinced ministers that a person of his description was little likely to engage in any conspiracy, and he was liberated after exciting a hearty laugh among the members of the board. Among the best productions of this artist are his St. Cecilia, after Domenichino; Diogenes, from a painting by Salvator Rosa; and Ecce Homo, from Guido; a Madonna and child, from Carlo Dolci; and a Zenobia, from a picture by Michel Angelo in the collection of Sir J. Reynolds. He also engraved several valuable portraits, and a large historical picture by Turnbull, of the Sortie from Gibraltar on the morning of November 27th, 1781.

SHARPE (Gregory), D. D., F. R., et A. S. S., a learned English divine, born in Yorkshire in 1713. After acquiring grammar at Hull, he came to Westminster, and studied under the celebrated Dr. Friend. A piece of juvenile indiscretion made his friends withdraw him from this seminary in 1731, and placed him under the care of principal Blackwell in Aberdeen: where he also studied under professor William Duff and John Stewart. On his return to England, he entered into orders, and, after some inferior promotions, succeeded Dr. Nicolls, as master of the temple, and was appointed one of the king's chaplains. He died unmarried, January 8th, 1771. He published several respectable works, and many sermons: and his skill in the oriental languages was extensive.

SHARPS, in flour, the finer part of what are denominated POLLARDS. See that article.

SHARRICK (Robert), LL.D., a learned English divine and civilian; born at Adotock in Bucks, and educated at Oxford, where he graduated. He was afterwards appointed prebendary and archdeacon of Winchester, and rector of Bishop's Waltham in Hants. He wrote A Treatise on the Propagation of Plants; and some other works; and died in 1784.

SHASTAH, SHASTER, SHASTREM, or Bedang, the name of a sacred book, in high estimation among the Hindoos, containing all the dogmas of the religion of the Brahmins, and all the ceremonies of their worship: and serving as a commentary on the Vedam. The term Shaster denotes science or system; and is applied to other works of astronomy and philosophy, which have no relation to the religion of the Indians.

None but the Brahmins and rajahs of India are allowed to read the Vedam ; the priests of the Banians, called Shuderers, may read the Shaster ; and the people, in general, are allowed to read only the Paran or Pouran, which is a commentary on the Shaster. The Shaster is divided into three parts : the first containing the moral law of the Indians ; the second the rites and ceremonies of their religion ; and the third the distribution of the people into tribes or classes, with the duties pertaining to each class. The principal precepts of morality contained in the first part of the Shaster are the following :—That no animal be killed, because the Indians attribute souls to brutes as well as to mankind : that they neither hear nor speak evil, nor drink wine, nor eat flesh, nor touch any thing that is unclean ; that they observe the feasts, prayers, and washings, which their law prescribes ; that they tell no lies, nor be guilty of deceit in trade ; that they neither oppress nor offer violence to one another ; that they celebrate the solemn feasts and fasts, and appropriate certain hours of ordinary sleep for prayer ; and that they do not steal, or defraud one another. The ceremonies contained in the second part of the Shaster are such as these :—that they wash often in the rivers, to wash away their sins ; that they mark their forehead with red, in token of their relation to the Deity ; that they present offerings and prayers unto certain trees ; that they pray in the temples, make oblations to their pagodas, or idols, sing hymns, and make processions, &c. ; that they make pilgrimages to distant rivers, especially to the Ganges, to wash themselves and make offerings ; that they make vows to particular saints, according to their respective departments ; that they render homage to the Deity at the first sight of the sun ; that they pay their respect to the sun and moon, which are two eyes of the Deity ; and that they treat with particular veneration those animals that are deemed more pure than others ; as the cow, buffalo, &c., because the souls of men have transmigrated into these animals. The third part of the Shaster records the distribution of the people into four classes : the first being that of the Brahmins or priests, appointed to instruct the people ; the second, that of the kutteris or nobles, who are the magistrates ; the third that of the shuddries or merchants ; and the fourth that of the mechanics. Each person is required to remain in the class in which he was born, and to pursue the occupation assigned to him by the Shaster. According to the Brahmins, the Shaster was imparted by God himself to Brahma, and by him to the Brahmins ; who communicated the contents of it to the people. See GENTOOS, and HINDOOS. Modern writers have given us very different accounts of the antiquity and importance of the Shaster. Mr. Holwell, who has made considerable progress in the translation of this book, apprehends that the mythology as well as the cosmogony of the Egyptians, Greeks, and Romans, were borrowed from the doctrines of the Brahmins, contained in it, even to the copying of their exteriors of worship, and the distribution of their idols, though grossly mutilated and adulterated. With respect to the Vedam and Shaster, or scriptures of the Gentoos, Mr. Holwell

says that Vedam, in the Malabar language, signifies the same as Shaster in the Shanscrit ; and that the first book is followed by the Gentoos of the Malabar and Coromandel coasts, and also of the island of Ceylon. The Shaster is followed by the Gentoos of the provinces of Bengal, and by all the rest of India, commonly called India Proper, along the course of the Ganges and Junna to the Indus. Both these books (he says) contain the institutes of their respective religion and worship, as well as the history of their ancient rajahs and princes, often couched under fable. Their antiquity is contended for by the partisans of each ; but he thinks that the similitude of their names, idols, and a great part of their worship, leaves little room to doubt, that both these scriptures were originally one. He adds, if we compare the great purity and chaste manners of the Shaster with the great absurdities and impurities of the Vedam, we need not hesitate to pronounce the latter a corruption of the former. With regard to the high original of these scriptures, the account of the Brahmins is as follows :—Brahma, or the Mighty Spirit, about 4866 years ago, assumed the form of man and the government of Hindostan. He translated the divine law (designed for the restoration of mankind, who had offended in a pre-existent state, and who are now in their last scene of probation, to the dignity from which they were degraded) out of the language of angels into the well known Shanscrit language, and called his translation the Chartah Bhade Shastah of Birmah, or the Six Scriptures of Divine Words of the Mighty Spirit. He appointed the Brahmins (so named from him) to preach the word of God ; and the doctrines of the Shaster were accordingly preached in their original purity 1000 years. About this time there was published a paraphrase on the Chartah Bhade ; and, about 500 years afterwards, a second exposition called the Aughtorrah Bhade Shasta, or Eighteen Books of Divine Words, written in a character compounded of the common Indostan and the Shanscrit. This innovation produced a schism among the Gentoos ; on which occasion, it is said, those of Coromandel and Malabar formed a scripture of their own, which they pretended to be founded on the Chartah Bhade of Brahma, and called it the Vedam of Birmah, or Divine Words of the Mighty Spirit. The original Chartah Bhade was thrown aside, and at length wholly unknown, except to a few families ; who can still read and expound it in the Shanscrit character. With the establishment of the Aughtorrah Bhade, and Vedam, which, according to the Gentoos account, is 3366 years ago, their polytheism commenced ; and the principles of religion became so obscure, and their ceremonies so numerous, that every head of a family was obliged to keep a Brahmin as a guide both in faith and practice. Mr. Holwell is of opinion that the Chartah Bhade, or Original Scriptures, are not copied from any other system of theology promulgated to or obtruded upon mankind. The Gentoos do not attribute them to Zoroaster ; and Mr. Holwell supposes that both Zoroaster and Pythagoras visited Indostan, not to instruct, but to be instructed. From the account of Mr. Dow we learn that the books which contain the religion and philosophy of the

Hindoos are distinguished by the name of Bedas ; that they are four in number, and said to be penned by the Divinity. Beda, he says, in the Shanscrit language, literally signifies science ; and these books treat not only of religion and moral duties, but of every branch of philosophic knowledge. The Brahmins maintain that the Bedas are the divine laws which Brimha, at the creation of the world, delivered for the instruction of mankind ; but they affirm that their meaning was perverted in the first age by the ignorance and wickedness of some princes, whom they represent as evil spirits who then haunted the earth. The first credible account we have of the Bedas is, that about the commencement of the Ca<sup>l</sup> Jug, of which era the year 1768 was the 4886th year, they were written, or rather collected, by a great philosopher and reputed prophet, called Beiss Muni, or Beiss the Inspired. The Hindoos, says Mr. Dow, are divided into two great religious sects (see HINDOOS) : the followers of the doctrine of Bedang, which is the original Shaster, or commentary upon the Bedas ; and those who adhere to the principles of the Neardirsen. The original Shaster is called Bedang, and is a commentary upon the Bedas. This book, he says, is erroneously called in Europe the Vedam. It is ascribed to Beiss Muni, and is said to have been revised some years after by one Serrider Swami, since which it has been reckoned sacred, and not subject to any farther alterations. Almost all the Hindoos of the Decan, and those of the Malabar and Coromandel coasts are of this sect. The followers of the Bedang Shaster do not allow that any physical evil exists ; they maintain that God created all things perfectly good ; but that man, being a free agent, may be guilty of moral evil, which may be injurious to himself, but can be of no detriment to the general system of nature. God, they say, being perfectly benevolent, never punished the wicked otherwise than by the pain and affliction which are the natural consequences of evil actions ; and hell, therefore, is no other than a consciousness of evil. The Neardirsen Shaster is said to have been written by a philosopher called Goutam, nearly 4000 years ago. The Brahmins, from Mr. Dow's account of their sacred books appear to believe invariable in the unity, eternity, omniscience, and omnipotence of God ; and their polytheism is no more than a symbolical worship of the divine attributes, which they divide into three classes. Under the name of Brimha they worship the wisdom and creative power of God ; under the appellation of Bishen his providential and preserving quality ; and under that of Shibah that attribute which tends to destroy. But similar apologies have been made by or for idolaters in all ages. As few of our readers may have an opportunity of perusing the Shaster, we shall, by way of specimen, subjoin a passage from the first chapter of it, which is a dialogue between Brimha, the Wisdom of the Divinity, and Narud, or Reason, the son of Brimha :—

*Narud.*—O father ! thou first of God ! thou art said to have created the world, and thy son Narud, astonished at what he beholds, is desirous to be instructed how all these things were made.

*Brimha.*—Be not deceived my son. Do not imagine that I was the creator of the world, independent of the Divine Mover, who is the great original essence and creator of all things. Look, therefore, only upon me as the instrument of the great Will, and a part of his being, whom he called forth to execute his eternal designs.

*Narud.*—What shall we think of God ?

*Brimha.*—Being immaterial, he is above all conception ; being invisible, he can have no form ; but, from what we behold in his works, we may conclude that he is eternal, omnipotent, knowing all things, and present every where.

*Narud.*—How did God create the world ?

*Brimha.*—Affection dwelt with God from all eternity. It was of three different kinds ; the creative, the preserving, and the destructive. The first is represented by Brimha, the second by Bishen, and the third by Shibah. You, O Narud ! are taught to worship all the three in various shapes and likenesses, as the Creator, the Preserver, and the Destroyer. The affection of God then produced power ; and power, at a proper conjunction of time and fate, embraced goodness, and produced matter. The three qualities then acting upon matter produced the universe, &c. Order rose over the universe. The seven heavens were formed, and the seven worlds were fixed in their places, there to remain till the great dissolution, when all things shall be absorbed into God.

*Narud.*—Shall not then the souls of good men receive rewards ? nor the souls of the bad meet with punishment ?

*Brimha.*—The souls of men are distinguished from those of other animals ; for the first are endued with reason, and with a consciousness of right and wrong. If therefore man shall adhere to the first, as far as his powers shall extend, his soul, when disengaged from the body by death, shall be absorbed into the divine essence, and shall never more reanimate flesh ; but the souls of those who do evil are not, at death, disengaged from all the elements. They are immediately clothed with a body of fire, air, and akash (a kind of undefined celestial element), in which they are for a time punished in hell. After the season of their grief is over, they reanimate other bodies ; but till they shall arrive at a state of purity they can never be absorbed into God.

*Narud.*—What is the nature of that absorbed state which the souls of good men enjoy after death ?

*Brimha.*—It is a participation of the divine nature, where all passions are utterly unknown, and where consciousness is lost in bliss !

*Narud.*—How long shall this world remain ?

*Brimha.*—Until the four lugs shall have revolved. Then Rudder (the same with Shibah, the destroying quality of God), with the ten spirits of dissolution, shall roll a comet under the moon, that shall involve all things in fire, and reduce the world into ashes. God shall then exist alone, for matter will be totally annihilated. Those who desire more information on this subject may consult Dow's History of Indostan, Holwell's Interesting Historical Events, &c.

**SHATTER**, *v. a., v. n., & **v.*** Belg. *schetteren*;   
**SHATTERY**, *adj.* [n. s.] Teut. *scheiteren*.  
 To break at once into pieces; break so as to scatter the parts: dissipate: be broken: a broken part: the adjective corresponding.

He raised a sigh so piteous and profound,  
 That it did seem to *shatter* all his bulk,  
 And rend his being. *Shakspeare.*  
 Of bodies some are fragil, and some are tough and not fragil; and, in the breaking, some fragil bodies break but where the force is; some *shatter* and fly in many places. *Bacon.*

Ye myrtles brown, with ivy never scar,  
 I come to pluck your berries harsh and crude,  
 And with forced fingers rude  
*Shatter* your leaves before the mellowing year. *Milton.*

They escape dissolution, because they can scarce ever meet with an agent minute and swiftly enough moved to *shatter* or dissociate the combined parts. *Boyle.*

A monarchy was *shattered* to pieces, and divided amongst revolted subjects, into a multitude of little governments. *Locke.*

Black from the stroke above, the smouldring pine Stands as a *shattered* trunk. *Thomson's Seasons.*

A man of a loose, volatile, and *shattered* humour, thinks only by fits and starts. *Norris.*

A brittle *shattery* sort of spar, found in form of a white sand chiefly in the perpendicular fissures amongst the ores of metal. *Woodward.*

Stick the candle so loose that it will fall upon the glass of the sconce, and break it into *shatters*. *Swift.*

**SHAVE**, *v. a.* *Proterite shaved; part.*  
**SHAVE'LING**, *n. s.* shaved or shaven. *Sax.*  
**SHA'VER**, *n.* *creafan*; Belg. *schaeven*  
**SHA'VING**. *To pare; pare close; skim; cut into thin slices: shaveling, a man shaved; a friar: a shaver, a man closely attentive to his own interest; a cheat: a shaving is a thin piece of any thing shaved off.*

He that is to be cleansed shall *shave* off all his hair. *Leviticus.*

Of elfes, there be no such things; only by bald friars and knavish *shavelings* so feigned. *Spenser.*

Dost thou not know this *shaven* pate? Truly it is a great man's head. *Knolles's History of the Turks.*

They fell all into the hands of the cruel mountain people, living for the most part by theft, and waiting for wrecks, as hawks for their prey: by these *shavers* the Turks were stript of all they had. *Knolles.*

Zelim was the first of the Ottomans that did *shave* his beard: a bashaw asked, Why he altered the custom of his predecessors? He answered, Because you bashaws may not lead me by the beard, as you did them. *Bacon.*

Make some medley of earth, with some other plants bruised or *shaven* in leaf or root. *Id.*

Take lignum aloes in gross *shavings*, steep them in sack, changed twice, till the bitterness be drawn forth; then take the *shavings* forth, and dry them in the shade, and beat them to powder. *Id.*

Sweet bird!

Thee, chauntress, oft the woods among I woee, to hear thy evening song; And, missing thee, I walk unseen On the dry smooth *shaven* green. *Milton.*

He *shaves* with level wing the deep; then soars Up to the fiery concave towering high. *Id.*

The *shaving* are good for the fining of wine. *Mortimer.*

The bending scythe  
*Shaves* all the surface of the waving green. *Gay*  
 I caused the hair of his head to be *shaved* off.  
*Wiseman.*

My lord  
 Was now disposed to crack a jest,  
 And bid friend Lewis go in quest;  
 This Lewis is a cunning *shaver*. *Swift.*

**SHAW** (Cuthbert), an English poet of considerable genius, but of humble origin, being the son of a shoe-maker. His poems, however, are far above mediocrity. But he had the fortune of Ferguson, not of Burns; for, meeting with no generous patron, he died in great distress in 1771.

**SHAW** (Peter), M. D., an eminent English physician, was author of several medical treatises, and editor of the great Bacon's Philosophical Works. He died in 1763.

**SHAW** (Samuel), an eminent English nonconformist divine of the seventeenth century, born at Repton in Derbyshire in 1635, and educated at the free school there. He afterwards became a member of St. John's College, Cambridge. In 1658 he obtained from Oliver the Protector a presentation to the rectory of Long Wharton; but was ejected, in 1622, for nonconformity. In 1668 he was chosen master of the free-school at Ashby de la Zouch; where he acquired great reputation, and educated many celebrated men of letters. He wrote a valuable work, entitled *Immanuel*; and died in 1696.

**SHAW** (Stebbing), a modern divine and topographer, was the son of a clergyman, and born in 1762, in Staffordshire. He was educated at Queen's College, Oxford, where he obtained a fellowship, and entered into orders: subsequently he became tutor to Sir Francis Burdett, with whom he made the tour of the Highlands. In 1788 he travelled through the western counties of England, a narrative of which journey he published. In 1789 he commenced a periodical publication, entitled *The Topographer*, in monthly parts, after which he gave the public his *History of Staffordshire*, the first volume of which appeared in 1798; a part of the second followed in 1801, previously to which the author had succeeded his father as rector of Hartshorn in Derbyshire. He died in the prime of life, the 28th of October, 1802.

**SHAW** (Thomas), D. D., and F. R. S., a learned English divine, celebrated for his Travels to Barbary and the Levant, was born in Kendal in Westmoreland about 1692. He was educated first at Kendal, afterwards at Queen's College, Oxford, where he graduated. He was appointed chaplain to the English consul at Algiers, in which station he continued for several years; and thence took opportunities of travelling into different parts. He returned in 1733; was elected F. R. S., and published the account of his travels at Oxford, folio, 1738. In 1740 he was nominated principal of St. Edmund Hall, which was raised from a ruinous state by his munificence; and was regius professor of Greek at Oxford until his death in 1751. Dr. Clayton, bishop of Clogher, having attacked these Travels in his Description of the East, Dr. Shaw published a supplement by way of vindication, which is incorporated in the second edition of his travels,

prepared by himself, and published in 4to., 1757.

SHAW (George), M. D., and F. R. S., an eminent naturalist, was born at Bierton, in Buckinghamshire, of which parish his father was vicar, in 1751. At the age of fourteen he went to Magdalen-hall, Oxford, where he took his master's degree in 1772; after which he entered into orders, and became assistant to his father. His predilection for scientific pursuits, however, induced him to relinquish the clerical profession; and after studying at Edinburgh he took his degrees in medicine at Oxford; where also he stood candidate for the botanical professorship; but lost it in consequence of his having been ordained. He now settled in London; and, on the formation of the Linnæan society, was chosen one of the vice-presidents. While the Leverian Museum existed he delivered lectures there on natural history, and afterwards published a description of that collection in English and Latin. He also conducted the Naturalist's Miscellany, and the Speculum Linnaeum, or Linnaean Zoology. In 1789 he was chosen a fellow of the Royal Society, and in 1791 appointed librarian and assistant keeper of natural history in the British Museum; where, in 1807, he became the principal of that department. He died July 22d, 1813. His other works are,—1. The Zoology of New Holland. 2. Cimelia Physica. 3. General Zoology, 7 vols. 4to. 4. Zoological Lectures, 2 vols. 8vo. 5. An Abridgement of the Philosophical Transactions, in conjunction with Drs. Pearson, Hutton, &c. 6. Papers in the Linnaean Transactions.

SHAWLS. The most beautiful shawls come from Cashmire: their price is from 150 livres (about six guineas) to 1200 livres (or £50 sterling). In the Transactions of the Society for encouraging Arts, Manufactures, &c., for 1792, we are informed that a shawl counterpane, four yards square, manufactured by Mr. P. J. Knights of Norwich, was presented to the society, and that, upon examination, it appeared to be of greater breadth than any goods of equal fineness and texture that had ever before been presented to the society, or to their knowledge woven in this country. The shawls of Mr. Knights's manufacture can scarcely be distinguished from Indian shawls, though they can be afforded at one-twentieth part of the price. When the shawl is sixteen quarters square, Mr. Knights says, it may be retailed at £20; if it consisted of twelve quarters, and embroidered as the former, it will cost £15; if plain, with a fringe only, a shawl of sixteen quarters square may be sold at £8 8s.; if twelve quarters and fringed, at £6 6s. Mr. Knights maintains that his counterpane of four yards square is equal in beauty, and superior in strength, to the Indian counterpanes which are sold at 200 guineas. The principal consumption of this cloth is in train-dresses for ladies; as likewise for long scarfs, in imitation of the real Indian scarfs, which are sold from £60 to £30; whereas scarfs of this fabric are sold for as many shillings, and the ladies square shawls in proportion.

SHAWM', n.s. Teut. *schawme*. A hautboy; a cornet; written likewise shalm.

With trumpets also and *shawms*.

*Psalms. Common Prayer.*

SHE, *proi.* In oblique cases her. Sax. *þeo*; Goth. *si*; old Eng. *sche*. The female pronoun demonstrative; the woman; the woman before mentioned; the female; sometimes used in contempt.

This once disclosed,

The ladies did change favours, and then we,  
Following the signs, wooed but the sign of *she*.

*Shakespeare*

What, at any time, have you heard *her* say? *Id.*  
The *shes* of Italy shall not betray

Mine interest and his honour. *Id. Cymbeline.*

Lady, you are the cruellest *she* alive,

If you will lead these graces to the grave,

And leave the world no copy. *Id. Twelfth Night.*

I would outstare the sternest eyes that look,  
Pluck the young sucking cubs from the *she* bear,

To win thee, lady. *Id. Merchant of Venice.*

He lions are hirsute, and have great manes; the  
*shes* are smooth, like cats. *Bacon.*

*She*, of whom the ancients seemed to prophesy,

When they called virtues by the name of *she*;

*She*, in whom virtue was so much refined,

That for allay unto so pure a mind

*She* took the weaker sex. *Donne.*

The most upright of mortal men was he;  
The most sincere and holy woman *she*. *Dryden.*

Stand it in Judah's chronicles confess,  
That David's son, by impious passion moved,  
Smote a *she* slave, and murdered what he loved. *Prior.*

SHEA, the name of a tree, from the fruit of which the negroes, in the interior parts of Africa, between the tropics, prepare a kind of vegetable butter. These trees are not planted by the natives, but are found growing naturally in the woods; and in clearing wood-land for cultivation every tree is cut down but the shea. The tree itself very much resembles the American oak; and the fruit, from the kernel of which, being first dried in the sun, the butter is prepared, by boiling the kernel in water, has somewhat the appearance of a Spanish olive. The kernel is enveloped in a sweet pulp, under a thin green rind; and the butter produced from it, besides the advantage of its keeping the whole year without salt, is whiter, firmer, and, Mr. Park says, to his palate, of richer flavor, than the best butter which he had tasted made from cows' milk. The growth and preparation of the commodity seem to be among the first objects of African industry in this and the neighbouring states; and it constitutes a main article of their inland commerce. In some places they dry the fruit in kilns, containing each about half a cart load of fruit, under which is kept up a clear wood fire. Our author, who saw the fruit in one of these kilns, was informed that in three days the fruit would be ready for pounding and boiling; and that the butter thus manufactured is preferable to that which is prepared from fruit dried in the sun; especially in the rainy season, when the process by insolation is always tedious, and oftentimes ineffectual. Might it not be worth while, if practicable, to cultivate shea trees in some of our West India Islands?

SHEAF, n.s. Plural sheaves. Sax. *pceap*; Belg. *schoof*. A bundle of stalks of corn bound together; any bundle or collection held together.

These be the *sheaves* that honour's harvest bears,  
The seed, thy valiant acts; the world, the field.  
*Fairfax.*

He beheld a field,  
Part arable and tilth; whereon were *sheaves*  
New reaped: the other part sheep-walks and folds.  
*Milton.*

The reaper fills his greedy hands,  
And binds the golden *sheaves* in brittle bands.  
*Dryden.*

She vanished;  
The *sheaf* of arrows shook and rattled in the case.  
*Id.*

In the knowledge of bodies, we must glean what  
we can; since we cannot, from a discovery of their  
real essences, grasp at a time whole *sheaves*, and in  
bundles comprehend the nature of whole species.  
*Locke.*

SHEAL, *v. a.* To shell. See SHEALE.

Thou art a shealed peasecod.  
*Shakespeare. King Lear.*

SHEAR, *v. a. & n.s.* { Preter. shore or shear.  
SHEAR'ER, } ed., part. pass. shorn.  
SHEAR'MAN. } Sax. *rceapian, reynen.*  
This word, says Johnson, is more frequently  
written sheer; but sheer cannot analogically form  
shore or shorn: shear, shore, shorn; as tear, tore,  
torn. To clip or cut by intercession between  
two blades moving on a rivet: the plural shears  
is the name of the instrument used: also a name  
for wings (in Spenser) and for the age of sheep:  
a shearer and shearman is one who clips with,  
or uses shears.

Laban went to shear his sheep. *Gen. xxxi. 19.*

Alas! thought Philoclea to herself, your *sheers*  
come too late to clip the bird's wings that already is  
flown away. *Sidney.*

Two sharp-winged *sheers*  
Decked with divers plumes, like painted jays,  
Were fixed at his back to cut his airy ways.  
*Spenser.*

So many days, my ewes have been with young;  
So many weeks, ere the poor fools will yean;  
So many mouths, ere I shall shear the fleece.  
*Shakespeare.*

Why do you bend such solemn brows on me?  
Think you I bear the *shears* of destiny?  
Have I commandment on the pulse of life? *Id.*

Thy father was a plasterer,  
And thou thyself a shearman. *Id.*

When wool is new shorn, they set pails of water  
by in the same room to increase its weight.  
*Bacon's Natural History.*

To lay my head, and hollow pledge  
Of all my strength, in the lascivious lap  
Of a deceitful concubine, who *shone* me,  
Like a tame wether, all my precious fleece. *Milton.*  
Of other care they little reck'ning make,  
Than how to scramble at the *sheavers* feast,  
And shove away the worthy bidden guest. *Id.*  
The same ill taste of sense would serve to join  
Dog foxes in the yoke, and *sheer* the swine.  
*Dryden.*

The fates prepared their sharpened *sheers*. *Id.*  
When the fleece is shorn,  
Then their defenceless limbs the brambles tear;  
Short of their wool, and naked from the *sheer*. *Id.*

When sheep is one *shear*, they will have two broad  
teeth before; when two *shear*, four; when three, six;  
when four, eight: and, after that, their mouths  
break. *Mortimer.*

The sharp and toothed edge of the nether chap  
strikes into the bone of the upper

and the toothed protuberance of the upper into a  
canal in the nether: by which means he easily *sheers*  
the grass whereon he feeds. *Grew.*

That people live and die, I knew,  
An hour ago, as well as you;  
And, if fate spins us longer years,  
Or is in haste to take the *shears*,  
I know we must both fortunes try,  
And bear our evils, wet or dry. *Prior.*  
Was he to be led as a lamb to the slaughter, pa-  
tient and resigned as a sheep before her *shearers*?  
*Rogers.*

Mkest thou henceforth sweetly sleep!  
*Shear*, swains, oh *shear* your softest sheep,  
To swell his rouch! *Gay.*  
Beneath the *s.ears* they felt no lasting smart;  
They lost but fleeces, while I lost a heart. *Id.*  
Fate urged the *shears*, and cut the sylph in twain,  
But airy substance soon unites again. *Pope.*  
O'er the congenial dust enjoined to *shear*  
The graceful curl, and drop the tender tear. *Id.*

How happy should we be if we had the privilege  
of employing the *sheers*, for want of a mint, upon  
foreign gold, by clipping it into half-crowns!  
*Swift.*

SHEARBILL, the rynchops nigra of Linnaeus,  
the black skimmer of Pennant and Latham, and  
cutwater of Catesby. See RYNCHOPS. Its bill  
is much compressed; the edges are sharp; the  
lower mandible is four inches and a half long;  
the upper only three; the base red; the rest is  
black; the forehead, chin, front of the neck, the  
breast, and belly, are white; the head and whole  
upper part of the body are black; the wings are  
of the same color; the lower part of the inner  
webs of the primaries is white; the tail is short,  
and a little forked; the middle feathers are  
dusky; the others are white on their sides; the  
legs are weak and red; the length is one foot nine  
inches; the extent is three feet seven inches. It  
inhabits America from New York to Guiana. It  
skims nimblly along the water, with its under  
mandible just beneath the surface, feeding on the  
insects and small fish as it proceeds. It frequents  
also oyster banks, its bill being partly like that  
of the oyster-eatcher, adapted for preying on  
those shell-fish.

SHEARD, *n. s.* Sax. *rceapd.* A fragment.  
It is now commonly written shard, and applied  
to fragments of earthenware.

In the bursting of it, not a *sherd* to take fire from  
the hearth, or to take water out of the pit.

*Isaiah xxx. 14.*

SHEATH, *n. s.* { Sax. *rceadē*. The  
SHEATH, *v. a.* } case of any thing; the  
SHEATH'-WINGED, *adj.* } scabbard of a weapon:  
SHEATH'Y. } to enclose in a scab-  
bard; fit with a sheath; enclose: sheath-winged  
is having sheaths over the wings: sheathy, form-  
ing a sheath.

The dead knight's sword out of his *sheath* he drew,  
With which he cut a lock off all their hair.

*Faerie Queene.*

There was no link to color Peter's hat,  
Walter's dagger was not come from *sheathing*.

*Shakespeare.*

It were to be wished that the whole navy through-  
out were sheathed as some are. *Raleigh.*

Doth not each look a flash of lightning feel,  
Which spares the body's *sheath*, yet melts the steel?  
*Cleavland.*

In his hair one hand he wreaths,  
His sword the other in his bosom sheaths. *Denham.*  
This, drawn but now against my sovereign's breast,  
Before 'tis sheathed shall give him peace and rest. *Waller.*

Those active parts of a body are of differing natures when sheathed up or wedged in amongst others, in the texture of a concrete, and when extricated from these impediments. *Boyle.*

Is this her hate to him, her love to me?

'Tis in my breast she sheathes her dagger now. *Dryden.*

The leopard, and all of this kind as goes, keeps the claws of his forefeet turned up from the ground, and sheathed in the skin of his toes, whereby he preserves them sharp for rapine, extending them only when he leaps at the prey. *Grew.*

Swords by the lightning's subtle force distilled,  
And the cold sheath with running metal filled. *Addison.*

Other substances, opposite to acrimony, are called demulcent or mild, because they blunt or sheath those sharp salts; as pease and beans. *Arbuthnot.*

Some insects fly with four wings, as all vaginipennous or sheathwinged insects, as beetles and dors. *Browne.*

With a needle put aside the short and sheathy cases  
on earwigs backs, and you may draw forth two wings. *Id.*

**SHEATHING**, in the sea language, is the easing that part of a ship which is to be under water with fir-board of an inch thick; first laying hair and tar mixed together under the boards, and then nailing them on, in order to prevent worms from eating the ship's bottom. Ships of war are now generally sheathed with copper; but copper sheathing is liable to be corroded by the action of salt water, and something is still wanting to effect this purpose. It is very probable that tar might answer very well. In the Cornish mines copper or brass pumps are often placed in the deepest parts, and are consequently exposed to the vitriolic or other mineral waters with which some of these mines abound, and which are known to have a much stronger effect on copper than sea water. These pumps are generally about six feet long, and are screwed together, and made tight by the interposition of a ring of lead, and the joinings are afterwards tarred. One of these pumps was so much corroded as to render it unfit for use; but the spots of tar, which by accident had dropped on it, preserved the parts they covered from the action of the water. These projected in some places more than a quarter of an inch; and the joints were so far defended, by the thin coat of tar, that it was as perfect as when it came from the hands of the manufacturer. If tar thus effectually defends copper from the acrimonious waters, can there remain a doubt of its preserving it from the much milder waters of the sea?

**SHEATS**, in a ship, are ropes bent to the clews of the sails; serving in the lower sails to haul aft the clews of the sail; but in topsails they serve to haul home the clew of the sail close to the yard-arm.

**SHEAVE**, in mechanics, a solid cylindrical wheel, fixed in a channel, and moveable about an axis, as being used to raise or increase the mechanical powers applied to remove any body.

**SHEBA**, or **SEBA** a country of Arabia Felix

or Abyssinia, which in the reign of Solomon king of Israel was governed by a queen named Makeda, or Balkis, who, hearing of that monarch's fame for wisdom and riches, waited on him personally, accompanied by a numerous train of attendants, and bringing a vast quantity of costly presents, as recorded in 1 Kings, x. According to the Abyssinian historians, this lady was not contented with the communication of Solomon's wisdom alone. Wishing to have a succession of wise monarchs in Sheba, she formed a closer connexion with him; and accordingly had a son by him named David whose posterity, according to Mr. Bruce, still continue to reign in Abyssinia or Ethiopia. See **ETHIOPIA**. The compilers of the Universal History are of opinion, as well as Mr. Bruce, that the queen of Sheba was really sovereign of Ethiopia. 'Ethiopia,' say they, 'is more to the south of Judea than the territory or kingdom of Saba in Arabia Felix; consequently it had a better claim than that country for the dominions of the princess whom our Saviour calls 'the queen of the south.' Ethiopia is styled the remotest part of the habitable world by Herodotus and Strabo; and therefore better agrees with what our Saviour has said of the queen of Sheba, that she 'came from the uttermost parts of the earth,' than Arabia. Nor can it be deemed a sufficient reply to this argument, that Arabia Felix was the uttermost part of the earth in respect to Judea, since it was bounded by the Red Sea; for that not only Egypt, but even Ethiopia, regions beyond that sea, were known to the Jews, and had a communication with them, both before and in our Saviour's time, is indisputably clear. Lastly, from what has been suggested, it appears no improbable conjecture that Judaism was not only known, at least in a part of Ethiopia, but nearly related to the established religion there, at the beginning of the apostolic age, if not much earlier. After all, these two opinions, so contrary in appearance, may be made consistent without great difficulty; since it is agreed that Arabia and Ethiopia have anciently borne the same name, been included during certain intervals in one empire, and governed by one prince. Part of the Arabs and Ethiopians had the same origin, and very considerable numbers of the Abaseni transported themselves from Arabia Felix into Ethiopia; a circumstance which sufficiently proves the intercourse that formerly subsisted between the Cushites or Ethiopians of Asia and Africa.'

**SHEBA**, or **SEBA**, the name of four patriarchs mentioned in Scripture, one or other of whom gave name to the above country, viz. the eldest of Cush, grandson of Ham and brother of Nimrod: Gen. x. 7. 2. The son of Raamah, and grandson of Cush: Gen. x. 7. 3. The son of Joktan: Gen. x. 28. And, 4. A son of Jokshan, and grandson of Abraham by Keturah. All these took up their residence in Arabia.

**SHEBA**, the son of Bichri, a Benjamite who attempted to raise a rebellion, after the death of Absalom; but was pursued by Joab, and beheaded by the people of Abel-Bethmaacah, to whom he had fled, and who delivered his head to Joab, who thereupon raised the siege of it. See **ABEL-BETHMAACAH**.

SHEBA, in geography, is the same with Beer-Sheba, i. e. The Well of the Oath (*Gen. xxxi. 23*); and where it is mentioned in *Joshua, xix. 2*, it should read ‘Beer-Sheba or Sheba,’ not ‘and Sheba;’ which makes exactly thirteen cities, as enumerated in the sixth verse. See BEER-SHEBA and BERS-ABE.

SHEBAT. See SEBAT.

SHEBBEAR (John), M. D., was born at Bideford, in Devonshire, in 1709. His father was an attorney; but having small practice, and little fortune, he carried on also the business of a corn-factor. He had four children, two sons and two daughters. Of the sons, John was the eldest. The other son was called Richard, and entirely the reverse of his brother in disposition; he was bred to the sea, and died young. John received the rudiments of his education at the free school of Exeter, then conducted by the learned Mr. Zachary Mudge (author of an *Essay for a new Version of the Psalms, and a volume of excellent Sermons*), afterwards rector of St. Andrew in Plymouth. In the fifteenth or sixteenth year of his age young Shebbeare was bound an apprentice to a very eminent and worthy surgeon in his native town; in which situation he acquired a considerable share of medical knowledge. His genius for lampoon appeared at this early period, and he could not forbear from exercising it on his master. The chief marks, however, of the arrows of his wit were the gentlemen of the corporation: one or other, and sometimes all of them, were exposed in a libel upon the public posts. But, though the wiser part of them only laughed at these harmless trifles, yet some were more irritable, and many a prosecution was commenced against, but not one could fix itself upon him, so artfully had he contrived to conceal himself. He was also several times summoned to appear at the sessions, for daring to speak and write irreverently of the worshipful magistrates; but the laugh was always on the side of Shebbeare, nor could they ever come at his back, so closely had he fitted on his armour, with the whip of authority. When he was out of his time he set up trade for himself, and then showed a taste for chemistry; and soon after he married a very agreeable and amiable young woman of no fortune, but of a genteel family. Whether his insuperable propensity to satire deprived him of friends and of business, or that he spent too much in chemical experiments, we know not; but failing at Bideford, he removed about 1736 to Bristol, where he entered into partnership with a chemist, and never afterwards set his foot in his native town. In 1739 he attracted the attention of the public, by an epitaph to the memory of Thomas Coster, esq; member for Bristol; in which he has contrived to raise emotions of pity, grief, and indignation, to a very high degree. In 1740 he published a pamphlet on the Bristol waters; from which period there is a chasm in our author’s life we are unable to fill up. In 1752 he was at Paris, where he obtained his degree. Until this time he appears to have lived in obscurity; but at an age when vigorous exertion usually subsides, he seems to have resolved to place himself in a conspicuous situation, whatever hazard might attend it, and

commenced a public writer with a degree of asperity and virulence for which it would be difficult to find a parallel even in the most intemperate times. To read over his works now, when the passions they then raised have subsided, we feel surprise at the effect they produced; and it is within the memory of many yet living that their influence was very considerable. In 1754 he began his career with the *Marriage Act*, a political novel; in which he treated the legislature with such freedom that it occasioned his being taken into custody; whence, however, he was soon released. The performances, however, most celebrated, were a series of Letters to the People of England, well calculated to make an impression on common readers; they were accordingly read with avidity, and circulated with diligence. On the publication of the Third Letter, warrants dated 4th and 8th of March, 1756, were issued by lord Holderness, to take up both Scott the publisher and the author. This prosecution, however, seems to have been dropt, and the culprit proceeded for some time unimpeded having declared that he would write himself into a post or into a pillory; in the last of which he at length succeeded. On the 12th of January, 1758, a general warrant was signed by lord Holderness, to search for the author, printer, and publishers, of a wicked, audacious, and treasonable libel, entitled *A Sixth Letter to the People of England, on the Progress of National Ruin*; in which is shown that the present grandeur of France and calamities of this nation are owing to the influence of Hanover on the councils of England. At this juncture government seem to have been effectually roused; for, having received information that a seventh letter was printing, by virtue of another warrant, dated January 23d, all the copies were seized and entirely suppressed. In Easter term an information was filed against him by Mr. Pratt, then attorney-general, afterwards lord Camden; in which the crown officer, in his application to the court, in express terms admitted a point afterwards much disputed, but now established, that of the jury’s right to determine both the law and the fact in matters of libel. On the 17th of June the information was tried, when our author was found guilty; and on the 28th of November he was fined £5; ordered to stand in the pillory December 5th, at Charing Cross; to be confined three years; and to give security for his good behaviour for seven years, himself in £500, and two others in £250 each. On the day appointed that part of the sentence which doomed him to the pillory was put in execution, amidst a prodigious concourse of people assembled on the occasion. The under sheriff at that time happened to be Mr. Beardmore, who had sometimes been assisted by the doctor in writing the *Monitor*, a paper in its principles of the same tendency with the writings of the culprit, who consequently might expect every indulgence from the officer to whom the execution of his sentence was committed. Accordingly the defendant stood upon the platform of the pillory, unconfined, and at his ease, attended by a servant in livery, holding an umbrella over his head all the time; but his head, hands, neck, and arms, were not at all

confined, or put into the holes of the pillory. For this neglect of duty, Beardmore was fined £50, and suffered two months' imprisonment. Some time before he was tried for the above publication, the duchess of Queensbury, as heir of lord Clarendon, obtained an injunction in the court of chancery to stop the publication of the continuation of that nobleman's history; a copy of which had got into the hands of Francis Gwyn, esq., between whom and the doctor there had been an agreement to publish it. The care and expenses attending the ushering this work into the world were to be wholly Dr. Shebbeare's, who performed his part of the agreement, and caused it to be handsomely printed in quarto, with frequent reflections on, and allusions to recent events. On the injunction being obtained, Dr. Shebbeare was under the necessity of applying to the aid of law to recover the money expended by him in printing, amounting to more than £500. And it may be easily imagined that his circumstances were not improved by three years' imprisonment. During his confinement, he declares, he never received as presents more than twenty guineas from all the world, although receipts were issued for a first volume of the 'History of England, and of the Constitution thereof from its origin.' That volume he wrote, and had transcribed; but it was never published, for which he assigned various reasons, too tedious to be quoted. He said, however, that he did not intend to die until what he had proposed was finished; a promise which he was unable to perform. He was detained in prison during the whole time of the sentence, and with some degree of rigor; for when his life was in danger from an ill state of health, and he applied to the court of king's bench for permission to be carried into the rules a few hours in a day, though lord Mansfield acceded to the petition, yet the prayer of it was denied and defeated by judge Forster. But at the expiration of the time of his sentence, a new reign had commenced; and shortly afterwards, during the administration of Mr. Grenville, a pension was granted him by the crown. This he obtained by the personal application of Sir John Philips to the king, who, on that occasion, spoke of him in very favorable terms, which he promised to endeavour to deserve. From that event we find Dr. Shebbeare a uniform defender of the measures of government, and the mark against whom every opposer of administration threw out the grossest abuse. Even the friends of power were often adverse to him. Dr. Smollet introduced him, in no very respectful light, under the name of Ferret, in the novel of Sir Launcelot Greaves, and Mr. Hogarth made him one of the group in the third election print. Scarcely a periodical publication was without some abuse of him, which he seems to have in general had the good sense to neglect. In 1774, however, he defended himself from some attacks made upon him, and represented the character of king William in such a light as to excite the indignation of every whig in the kingdom. Early in life he appears to have written a comedy, which in 1766 he made an effort to get represented at Covent Garden. In 1768 he wrote the review of books in the Political Re-

gister for three months, and was often engaged to write for particular persons, with whom he frequently quarrelled when he came to be paid. This was the case with Sir Robert Fletcher. His pen seems to have been constantly employed, and he wrote with great rapidity, what certainly can now be read with little satisfaction. Though pensioned by government, he can scarcely be said to have renounced his opinions; for, in the pamphlet already mentioned, his abuse of the Revolution is as gross as in that for which he suffered the pillory. His violence defeated his own purpose. He was a strenuous supporter of the ministry during the American war, and published in 1775. An Answer to the Speech of Edmund Burke, esq., April 19th, 1774. And An Essay on the Origin, Progress, and Establishment of National Society; in which the principles of government, the definitions of physical, moral, civil, and religious liberty, contained in Dr. Price's Observations, &c., are fairly examined and refuted; together with a justification of the legislature, in reducing America to obedience by force. His publications, satirical, political, and medical, amount to thirty-four; besides a novel, entitled Lydia or Filial Piety; in which religious hypocrisy and blustering courage are very properly chastised. He died on the 1st of August, 1788, leaving, among those who knew him best, the character of a benevolent man; notwithstanding the violence of his party spirit.

**SIECHEM**, the son of Hamor, the Hivite, prince of the country so named, a contemporary of the patriarch Jacob, who purchased from him a field for a burial ground. Upon this occasion, or soon after it, the prince, falling in love with Dinah, the patriarch's only daughter, seduced her; but, contrary to the villainous practice of most seducers of female innocence, generously and honorably proposed marriage to her father and brethren. But through the vindictive villainy of her two brethren, Simeon and Levi, a scene of hypocrisy, cruelty, and massacre, followed, which has scarcely a parallel, in the history of the most savage nations. Under pretence of religion, the prince, his father, and the whole men of the city were massacred; the women and children carried captives, and the city plundered. See Gen. xxxiv. The patriarch Jacob not only complained at the time, that their barbarity had made him to stink among the inhabitants, but pronounced a well merited curse upon the monsters, on his death bed, when he blessed the rest of his sons. Gen. xlix. 5—7.

**SUCHEM**, **SCHECHEM**, or **SICHEM**, a city of Canaan, the capital of the Shechemites, built by Hamor, and named after his son. It stood upon mount Ephraim, about ten miles north of Shiloh, and thirty or thirty-five north of Jerusalem, and belonged to the tribe of Ephraim. It was one of the cities of refuge, and is memorable for being the place where Joshua assembled the tribes, and gave them his last solemn advice, a short time before his death. Josh. xxiv. 1—28. On the death of Gideon, the Shechemites made his bastard son, Abimelech, king, and murdered seventy of his legitimate sons; but afterwards, rebelling against the usurper, he massacred the

people, razed their city, and burned their tower, with 1000 persons in it. See ABIMELECH. Shechem, however, was afterwards rebuilt, and about the end of Solomon's reign was a place of so much consequence that it became the scene of the revolution under his son Rehoboam, who was dethroned in it, and Jeroboam I. elected king, who repaired it, and made it his capital. It continued to be the capital of several of his successors, whose luxury and drunkenness procured it the name of Sychar, till the captivity of Shalmaneser. See SAMARIA. About A. M. 3870 it was taken, pillaged, and razed, by John Hyrcanus, king of the Jews. About A. D. 72 it was rebuilt by Vespasian, and named Flavia, and Neapolis. It is now called Naplouse or Nablous. See NABLUS, and SAMARITANS. Near Jacob's Well, at this town, a church was erected about the ninth century, of which there are still relics.

SHECK'LATON, *n. s.* Fr. *sheklatone*. A kind of embroidery.

He went to fight against the giant in his robe of *shecklaton*, which is that kind of gilded leather with which they use to embroider the Irish jackets.

*Spenser.*

SHED, *v. a., v. n., & }* Sax. *rēdān*. To

SHED'DER, *n. s.* { *n. s.* } effuse ; to pour out ; spill ; scatter ; let fall its parts : a slight covering.

Neither men putten newe wyn in to olde botels, ellis the botels ben to broken and destroyed, and the wyn *shed* out ; but men putten newe wyn into newe botels and bothe ben kept. *Wickif.* Matt. 9.

A *sheder* of blood shall surely die. *Ezek.* xviii. 10.

For this is my blood which is *shed* for many, for the remission of sins. *Matt.* xxvi. 28.

Though he his house of polished marble build, With jasper floored, and carved cedar cieled ; Yet shall it ruin like the moth's frail cell, Or *sheds* of reeds which summer's heat repel.

*Sundys.*

Trees that bring forth their leaves late, and cast them late, are more lasting than those that sprout their leaves early, or *shed* them betimes.

*Bacon's Natural History.*

Some think one general soul fills every brain, As the bright sun *sheds* light in ev'ry star. *Davies.*

The first Aletes born in lowly *shed*, Of parents base, a rose sprung from a briar.

*Fairfax.*

In such a season born, when scarce a *shed* Could be obtained to shelter him or me From the bleak air. *Milton's Paradise Regained.*

So all our minds with his conspire 'to grace The Gentile's great apostle, and deface Those state-obscuring *sheds*, that like a chain Seem'd to confine and fetter him again. *Waller.*

A round its entry nodding poppies grow, And all cool simples that sweet rest bestow ; Night from the plants their sleepy virtue drains, And passing *sheds* it on the silent plains. *Dryden.*

Unhappy man ! to break the pious laws Of nature, pleading in his children's cause : 'Tis love of honour, and his country's good ; The consul, not the father, *sheds* the blood. *Id.*

Those houses then were caves, or homely *sheds* With twining osiers fenced, and moss their beds.

*Id.*

White oats are apt to *shed* most as they lie, and black as they stand. *Mortimer's Husbandry.*

Then out he steals, and finds where *oy* the head Their horse hung fasten'd underneath a *shed*. *Betterton.*

So the returning year be blest,  
As his infant months bestow  
Springing wreaths from William's brow ;  
As his summer's youth shall *shed*  
Eternal sweets around Maria's head. *Prior.*

In these lone walls, their days eternal bound,  
These moss-grown domes with spiry turrets crown'd,  
Where awful arches make a noon-day night,  
And the dim windows *shed* a solemn light,  
Thy eyes diffused a reconciling ray,

And gleams of glory brightened all the day. *Pope.*

Here various kinds, by various fortunes led,  
Commerce acquaintance underneath a *shed*. *Swift.*

Weak as the Roman chief, who strove to hide  
His father's cot, and once his father's pride,  
By casing a low *shed* of rural mould  
With marble walls, and roof adorned with gold.

*Harte.*

SHEEN, *adj.* } Probably only the old pro-  
SHEEN'Y. } nunciation of shine. Bright ;  
glittering ; showy. A word now not in use.

When he was all dight, he took his way  
Into the forest, that he might be seen  
Of the wild beasts, in his new glory *sheen*.

*Hubberd's Tale.*

Now they never meet in grove or green,  
By fountain clear, or spangled star-light *sheen*.

*Shakspeare.*

Up rose each warrior bold and brave,  
Glistening in filed steel and armour *sheen*. *Fairfax.*

By the rushy fringed bank,  
Where grows the willow and the osier dank,  
My sliding chariot stays,  
Which set with agat, or the azure *sheen*,  
Of turcois blue, and emerald green. *Milton.*

Or did of late earth's sons besiege the wall  
Of *sheeny* heaven. *Id.*

SHEEN, EAST, a beautiful village of Surrey, in the parish of Mortlake, seated on an eminence, near the Thames, between Richmond and Roehampton.

SHEEN, WEST, an ancient hamlet of Surrey, in the parish of Richmond, which stood a quarter of a mile north-west of the old palace of Richmond, where Henry V. founded a Carthusian convent, in which Perkins Warbeck sought an asylum. Its last remnant, the ancient gateway, was taken down in 1770 ; when the whole hamlet, consisting of eighteen houses, was demolished, and the ground made into a lawn, and added to the king's enclosures.

SHEEP, *n. ..* Sax. *rēceap*, of which the plural was *reep* ; Belgic *schaeup* ; Gothic *skyfa*. A well-known animal. See below. To sheep-bite is to practise petty thefts : a sheep-biter is a petty thief : sheep-cot and sheep-fold, enclosures of sheep : sheepish, timorous ; awkward ; mean : the noun substantive corresponding : the other compounds do not seem to require explanation.

SHEEP'BITE, *v. n.*  
SHEEP'BITER, *n. s.*  
SHEEP'COT,  
SHEEP'FOLD,  
SHEEP'HOOKE,  
SHEEP'ISH, *adj.*  
SHEEP'ISHNESS, *n. s.*  
SHEEP'MASTER,  
SHEEP'S'EYE,  
SHEEP'S'HAFARING,  
SHEEP'WALK,  
SHEP'HERD,  
SHEP'HERDESS.  
SHEP'HERDISH, *adj.*

We are his people, and the *sheep* of his pasture.

*Psalm.*

His gate like a *sheepbiter* fleering aside. *Tusser.*

She put herself into the garb of a *shepherdess*, and in that disguise lived many years ; but, discovering herself a little before her death, did profess herself the happiest person alive, not for her condition, but in enjoying him she first loved ; and that she would rather, ten thousand times, live a *shepherdess* in contentment and satisfaction, *Sidney.*

He would have drawn her elder sister, esteemed her match for beauty, in her *shepherdish* attire. *Id.*

She saw walking from her ward, a man in *shepherdish* apparel. *Id.*

Shew your knave's visage, with a pox to you ; shew your *sheepbiting* face, and be hanged. *Shakspeare.*

Wouldst thou not be glad to have the niggardly rascally *sheepbiter* come to some notable shame ? *Id.*

Bedlam beggars, with roaring voices, Fom low farms, *sheepcots*, and mills, Inforce their charity. *Id. King Lear.*

I am *shepherd* to another man, And do not sheer the fleeces that I graze. *Shakspeare.*

These your unusual weeds to each part of you Do give a life : no *shepherdess*, but Flora Peering in April's front. *Id. Winter's Tales.*

If that the world and love were young, And truth in every *shepherd's* tongue, These pretty pleasures might me move, To live with thee and be thy love. *Raleigh.*

A nobleman was a great grazier and *sheepmaster*. *Bacon.*

The one carried a croisier of balm-wood, the other a pastoral staff of cedar like a *sheep-hook*. *Id. New Atlantis.*

Thy gentry bleats, as if thy native cloth Transfused a *sheepishness* into thy story. *Herbert.*

He beheld a field, Part arable and tilth, whereon were sheaves New reaped ; the other part *sheep-walks* and folds. *Milton.*

Up to a hill anon his steps he reared, From whose high top to ken the prospect round, If cottage were in view, *sheepcot*, or herd ; But cottage, herd, or *sheepcot*, none he saw. *Id.*

The like some *shepherdess* did shew, Who sat to bathe her by a river's side. *Dryden.*

His dorick dialect has incomparable sweetness in its clownishness, like a fair *shepherdess* in country russet. *Id.*

If you dare think of deserving our charms, Away with your *sheephook*, and take to your arms. *Id.*

Fire the bramble, snare the birds, and steep In wholesome water-falls the fleecy *sheep*. *Id.*

Cast a *sheep's-eye* behind you : in before me. *Id.*

There are political *sheepbiters* as well as pastoral ; betrayers of public trust as well as of private. *L'Estrange.*

Of substances there are two sorts of ideas ; one of single substances, as they exist separately, as a man, or *sheep*. *Locke.*

Wanting change of company, he will, when he comes abroad, be a *sheepish* or conceited creature. *Id.*

*Sheepishness* and ignorance of the world, are not consequences of being bred at home. *Id.*

Without success, let a man be never so hardy, he will have some degree of *sheepishness*. *Grew.*

There happening a solemn festivity, such as the *sheepshearings* used to be, David begs some small rest. *South.*

The bear, the lion, terrors of the plain ; The *sheepfold* scattered, and the *shepherd* slain. *Prior.*

Lead up all those who heard thee, and believ'd ; 'Midst thy own flock, great *shepherd*, be received, And glad all heaven with millions thou hast saved. *Id.*

**SHEEP**, in zoology. See *Ovis* and *Wool*. Among the various animals with which Divine Providence has stored the world, for the use of man, none is to be found more useful, or more valuable, than the sheep. It supplies us with food and clothing, and finds ample employment for our poor at all seasons of the year, whereby a variety of manufactures of woollen cloth is carried on without interruption to domestic comfort and loss to friendly society, or injury to health, as is the case with many other occupations. Every lock of wool that grows on its back contributes to the support of staplers, dyers, pickers, scourers, scribblers, carders, combers, spinners, spoolers, warpers, quillers, weavers, fullers, tuckers, burlers, shear-men, pressers, clothiers, and packers, who, one after another, tumble, and toss, and twist, and bake, and boil, this raw material, till they have each extracted a livelihood out of it ; and then comes the merchant, who, in his turn, ships it, in its highest state of improvement, to all quarters of the globe, whence ne brings back every kind of riches to his country in return for this valuable commodity which the sheep affords. Besides this, the useful animal, after being deprived of his coat, produces another against the next year ; and, when we are hungry, and kill him for food, he gives us his skin to employ the fettmongers and parchment-makers, who supply us with a durable material for securing our estates, rights, and possessions ; and, if our enemies take the field against us, supplies us with a powerful instrument for rousing our courage to repel their attacks. When the parchment-maker has taken as much of the skin as he can use, the glue-maker comes after and picks up every morsel that is left, and therewith supplies a material for the carpenter and cabinet-maker, which they cannot do without, and which is essentially necessary before we can have elegant furniture in our houses ; tables, chairs looking-glasses, and a hundred other articles of convenience. And, in absence of the sun, the sheep supplies us with an artificial mode of light, whereby we preserve every pleasure of domestic society, and with whose assistance we can continue our work, or write or read, and improve our minds, or enjoy the social mirth of our friends. Another part of the slaughtered animal supplies us with an ingredient necessary for making good common soap, a useful store for producing cleanliness in every family, rich or poor. Even the horns are converted by the button-makers and turners into a cheap kind of buttons, tips for bows, and many usef' ornaments. From the very trotters an oil is extracted useful for many purposes ; and they afford good food when baked in an oven. Even the bones are useful also ; for, by a late invention, they are found, when reduced to ashes, to be a useful and essential ingredient in the composition of the finest artificial stone in

ornamental work for chimney-pieces, cornices of rooms, houses, &c., which renders the composition more durable by effectually preventing its cracking. This meek inoffensive creature can feed where every other animal has been before him and grazed all they could find; and, if he takes a little grass on our downs or in our fields, he amply repays us in the richness of the manure which he leaves behind him. He protects the hands from the cold wintry blast, by providing them with the softest leather gloves. Every gentleman's library is also indebted to him for the neat binding of his books, for the sheath of his sword, and for cases for his instruments; in short, there is hardly any furniture or utensil of life but the sheep contributes to render either more useful, convenient, or ornamental.

Wales breeds a small hardy kind of sheep, which has the best tasted flesh, but the worst wool of all. Nevertheless it is of more extensive use than the finest Segovian fleeces; for the benefit of the flannel manufacture is universally known. The sheep of Ireland vary, like those of Great Britain; those of the south and east being large and their flesh rank; those of the north and the mountainous parts small, and their flesh sweet. The fleeces in the same manner differ in degrees of value. Scotland breeds a small kind in Shetland, and their fleeces are remarkably fine. But the new Leicestershire breed is perhaps one of the most profitable breeds in the island. See RURAL ECONOMY. Joseph Altom of Clifton, who raised himself from a plough-boy, was the first who distinguished himself in the midland counties of England for a superior breed of sheep. How he improved his breed is not known; but it was customary for eminent farmers in his time to go to Clifton in summer to choose and purchase ram-lambs, for which they paid two or three guineas. This man was succeeded by Mr. Bakewell; and it may reasonably be supposed that the breed, by means of Altom's stock, had passed the first stage of improvement before Mr. Bakewell's time. Still, however, it must be acknowledged that the Leicestershire breed of sheep owes its present high state of improvement to the ability and care of Mr. Bakewell.

This subject is pretty fully treated of under RURAL ECONOMY. The feeding sheep with turnips is a great advantage to the farmers. When they are made to eat turnips they soon fatten; but there is some difficulty in bringing this about. The old ones always refuse them at first, and will sometimes fast till almost famished; but the young lambs fall to at once. The common way of turning a flock of sheep at large into a field of turnips is very disadvantageous; for they would thus destroy as many in a fortnight as will keep them a whole winter. There are three other ways of feeding them on this food. The first is to divide the land into hurdles, and allow the sheep to come upon such a portion only at a time as they can eat in one day, and so advance the hurdles farther into the ground daily till all be eaten. This is infinitely better than the former random method; but they never eat them clean even this way, but leave the bottoms and outsides scooped in the ground: the

people pull up these indeed with iron crooks and lay them before the sheep again; but they are commonly so fouled that they do not care for them. The second way is by enclosing the sheep in hurdles, as in the former; but in this they pull up all the turnips which they suppose the sheep can eat in one day, and daily remove the hurdles over the ground whence they have pulled up the turnips: thus there is no waste, and less expense; for a person may in two hours pull up all those turnips, the remaining shells of which would have employed three or four laborers a day to get up with their crooks out of the ground trodden hard by the feet of the sheep; and the worst is that, as in the method of pulling up first, the turnips are eaten up clean; in this way, by the hook, they are wasted; the sheep do not eat any great part of them; and, when the ground comes to be tilled afterwards for a crop of corn, the fragments of the turnips are seen in such quantities on the surface that half the crop at least seems to have been wasted. The third method is to pull up the turnips, and remove them in a cart to some other place, spreading them on a fresh place every day; thus the sheep will eat them up clean, both root and leaves. The great advantage of this method is, when there is a piece of land not far off which wants dung more than that where the turnips grew, which perhaps is also too wet for the sheep in winter; and then the turnips will, by the too great moisture and dirt of the soil, sometimes spoil the sheep, and give them the rot. Yet such ground will often bring forth more and larger turnips than dry land; and, when they are carried off, and eaten by the sheep on ploughed land in dry weather, and on green sward in wet weather, the sheep will succeed much better, and the moist soil where the turnips grew, not being trodden by the sheep, will be much fitter for a crop of corn than if they had been fed with turnips on it. The expense of hurdles, and the trouble of moving them, are saved in this case, which will counterbalance at least the expense of pulling the turnips and carrying them to the places where they are to be eaten. They must always be carried off for oxen.

The manner in which Mr. Bakewell raised his sheep to the degree of celebrity in which they long stood, is, notwithstanding the recentness of the improvement, a thing in dispute; even among men high in the profession, and living in the very district in which the improvement has been carried on! This proprietor alone perhaps was in possession of the minutiae of his own improvement: it is most probable that no cross with any alien breed whatever was used; but that the improvement was effected by selecting individuals from kindred breeds, or varieties of long-wooled sheep, with which Mr. Bakewell was surrounded on almost every side, and by breeding in and in (i. e. from the same family) with this selection: solicitously seizing the superior accidental varieties produced; associating these varieties; and still continuing to select, with judgment, the superior individuals. It now remains to give a description of the superior class of individuals of this breed, especially ewes and wethers, in full condition, but not immoder-

ately fat. The rams will require to be distinguished afterwards. The head is long, small, and hornless, with ears somewhat long, and standing backward, and with the nose shooting forward. The neck thin, and clean toward the head; but taking a conical form; standing low, and enlarging every way at the base; the fore end altogether short. The bosom broad, with the shoulders, ribs, and chine extraordinarily full. The loin broad, and the back level. The haunches comparatively full towards the hips, but light downward; being altogether small in proportion to the fore parts. The legs of a moderate length; with the bones extremely fine. The bone throughout remarkably light. The carcase, when fully fat, takes a remarkable form; much wider than it is deep, and almost as broad as it is long. Full on the shoulder, widest on the ribs, narrowing with a regular curve towards the tail; approaching the form of the turtle nearer perhaps than any other animal. The pelt is thin, and the tail small. The wool is shorter than long wools in general, but much longer than the middle wools; the ordinary length of staple five to seven inches, varying much in fineness and weight. This breed surpasses every other in beauty of form; they are full and weighty in the fore quarters; and are remarkable for smallness of bone.

Mr. Marshall, who has been of so much benefit to agriculture and his country by his publications, informs us, in his *Rural Economy* of the Midland Counties, that he has seen a rib of a sheep of this breed contrasted with one of a Norfolk sheep: the disparity was striking; the latter nearly twice the size; while the meat which covered the former was three times the thickness: consequently the proportion of meat to bone was in the one incomparably greater than in the other. Therefore, in this point of view, the improved breed has a decided preference: for surely while mankind continue to eat flesh and throw away bone, the former must be, to the consumer at least, the more valuable.

The manner of managing sheep in Spain, a country famous for producing the best wool in the world, is as follows:—Here there are two kinds of sheep: the coarse-woollen sheep, which always remain in their native country, and are housed every night in winter; and the fine woollen sheep, which are always in the open air, and travel every summer from the cool mountains of the northern parts of Spain, to feed in winter on the southern warm plains of Andalusia, Mancha, and Estremadura. Of these latter it appears, from accurate computation, that there are about 5,000,000, and that the wool and flesh of a flock of 10,000 sheep produced yearly about twenty-four reals a-head, or about the value of twelve English sixpences, one of which belongs to the owner, three to the king, and the other eight are allowed for the expenses of pasture, tythes, shepherds, dogs, salt, shearing, &c. In the sixteenth century the travelling sheep were estimated at 7,000,000; 10,000 sheep form a flock, which is divided into ten tribes, under the management of one person, who has absolute dominion over fifty shepherds and fifty dogs. M. Bourgoanne, a French gentleman, who resided many years in

Spain, and directed his enquiries chiefly to the civil government, trade, and manufactures of that country, gives the following account of the wandering sheep of Segovia. ‘It is,’ says he, ‘in the neighbouring mountains that a part of the wandering sheep feed during the fine season. They leave them in October, pass over those which separate the two Castiles, cross New Castle, and disperse themselves in the plains of Estremadura and Andalusia. For some years past those of the two Castiles, which are within reach of the Sierra Morena, go thither to pass the winter; which, in that part of Spain, is more mild; the length of their day’s journey is in proportion to the pasture they meet with. They travel in flocks from 1000 to 1200 in number, under the conduct of two shepherds; one of whom is called the mayoral, the other the zagal. When arrived at the place of their destination, they are distributed in the pastures previously assigned them. They return in April; and whether it be habit or natural instinct that draws them towards the climate, which at this season becomes most proper for them, the inquietude which they manifest might, in case of need, serve as an almanac to their conductors.’ Mr. Arthur Young, in that patriotic work which he conducted with great industry and judgment, the *Annals of Agriculture*, gives us a very accurate and interesting account of the Pyrenean or Catalonian sheep. ‘On the northern ridge, bearing to the west, are the pastures of the Spanish flocks. This ridge is not, however, the whole; there are two other mountains, quite in a different situation, and the sheep travel from one to another as the pasturage is short or plentiful. I examined the soil of these mountain pastures, and found it in general stony; what in the west of England would be called a stone brash, with some mixture of loam, and in a few places a little peaty. The plants are many of them untouched by the sheep; many ferns, narcissus, violets, &c., but burnet (*poterium sanguisorba*) and the narrow leaved plantain (*plantago lanceolata*) were eaten close. I looked for trefoils, but found scarcely any: it was very apparent that soil and peculiarity of herbage had little to do in rendering these heights proper for sheep. In the northern parts of Europe, the tops of mountains half the height of these (for we were above snow in July) are bogs; all are so which I have seen in our islands, or at least the proportion of dry land is very trifling to that which is extremely wet:—Here they are in general very dry. Now a great range of dry land, let the plants be what they may, will in every country suit sheep. The flock is brought every night to one spot, which is situated at the end of the valley on the river I have mentioned, and near the port or passage of Picada: it is a level spot sheltered from all winds. The soil is eight or nine inches deep of old dung, not at all enclosed: from the freedom from wood all round, it seems to be chosen partly for safety against wolves and bears. Near it is a very large stone, or rather rock, fallen from the mountain. This the shepherds have taken for a shelter, and have built a hut against it; their beds are sheep skins, and their door so small that they crawl in. I saw no place for fire; but they

have it, since they dress here the flesh of their sheep, and in the night sometimes keep off the bears by whirling fire brands: four of them belonging to the flock mentioned above lie here. I viewed their flock very carefully, and, by means of our guide and interpreter, made some enquiries of the shepherds, which they answered readily, and very civilly. A Spaniard at Venasque, a city in the Pyrenees, gives 600 livres French a-year for the pasturage of this flock of 2000 sheep. In winter he sends them into the lower parts of Catalonia, a journey of twelve or thirteen days, and when the snow is melted, in the spring, they are conducted back again. They are the whole year kept in motion, and moving from spot to spot, which is owing to the great range they every where have of pasture. They are always in the open air, never housed or under cover, and never taste of any food but what they can find upon the hills. Four shepherds, and from four to six large Spanish dogs, have the care of this flock; the latter are in France called the Pyrenees breed; they are black and white, of the size of a large wolf, a large head and neck, armed with collars stuck with iron spikes. No wolf can stand against them; but bears are more potent adversaries.' But, as we have neither wolves nor bears in Britain, we need not quote Mr. Young's remarks on this subject.' He adds respecting the sheep: 'They are in general polled, but some have horns; which in the rams turn backwards behind the ears and project half a circle forward; the ewes' horns turn also behind the ears, but do not project: the legs white or reddish; speckled faces, some white, some reddish; they would weigh fat, I reckon, on an average, from fifteen to eighteen pounds a quarter. Some tails short, some left long. A few black sheep among them: some with a very little tuft of wool on their foreheads. On the whole they resemble those on the South Downs; their legs are as short as those of that breed; a point which merits observation, as they travel so much and so well. Their shape is very good; round ribs and flat straight backs; and would with us be reckoned handsome sheep; all in good order and flesh. To be still better acquainted with them, I desired one of the shepherds to catch a ram for me to feel, and examine the wool, which I found very thick and good of the carding sort. I took a specimen of it, and also of a hoggit, or lamb of last year. In regard to the mellow softness under the skin, which, in Mr. Bakewell's opinion, is a strong indication of a good breed, with disposition to fatten, he had it in a much superior degree to many of our English breeds, to the full as much so as the South Downs, which are for that point the best short-woollen sheep which I know in England. The fleece was on his back, and weighed, as I guessed, about eight pounds English; but the average, they say, of the flock is from four to five, as I calculated by reducing the Catalonian pound of twelve ounces to ours of sixteen, and is all sold to the French at 30s. the pound, French. This ram had the wool of the back part of his neck tied close, and the upper tuft tied a second knot by way of ornament; nor do they ever shear this part of the fleece for

that reason: we saw several in the flock with this species of decoration. They said that this ram would sell in Catalonia for twenty livres. A circumstance which cannot be too much commended, and deserves universal imitation, is the extreme docility they accustom them to. When I desired the shepherd to catch one of his rams, I supposed he would do it with his crook, or probably not be able to do it at all; but he walked into the flock, and, singling out a ram and a goat, bid them follow him, which they did immediately; and he talked to them while they were obeying him, holding out his hand as if to give them something. By this method he brought me the ram, which I caught, and held without difficulty.'

To find a proper composition for marking sheep is a matter of great importance, as great quantities of wool are every year rendered useless by the pitch and tar with which they are usually marked. The requisite qualities for such a composition are, that it be cheap, that the color be strong and lasting, so as to bear the changes of weather, and not to injure the wool. Dr. Lewis recommends for this purpose melted tallow, with so much charcoal in fine powder stirred into it as is sufficient to make it of a full black color, and of a thick consistence. This mixture, being applied warm with a marking iron, on pieces of flannel, quickly fixed or hardened, bore moderate rubbing, resisted the sun and rain, and yet could be washed out freely with soap, or ley, or stale urine. In order to render it still more durable, and prevent its being rubbed off, with the tallow may be melted an eighth, sixth, or fourth, of its weight of tar, which will readily wash out along with it from the wool.—Lewis's Com. Phil. Techn. p. 361.

The criteria of good and bad flesh, while the animal is alive, differ in different species, and are not properly settled in the same species. One superior breeder is of opinion that, if the flesh is not loose, it is of course good; holding that the flesh of sheep is never found in a state of hardness, like that of ill-fleshed cattle; while others make a four fold distinction of the flesh of sheep; as looseness, mellowness, firmness, hardness; considering the first and the last equally exceptional, and the second and third equally desirable; a happy mixture of the two being deemed the point of perfection. The flesh of sheep when slaughtered is well known to be of various qualities. Some is composed of large coarse grains, interspersed with wide empty pores like a sponge; others of large grains, with wide pores filled with fat; others of fine close grains, with smaller pores filled with fat; and a fourth of close grains without any intermixture of fatness. The flesh of sheep when dressed is equally well known to possess a variety of qualities; some mutton is coarse, dry, and insipid; a dry sponge, affording little or no gravy of any color. Another sort is somewhat firmer, imparting a light colored gravy only. A third plump, short, and palatable; affording a mixture of white and red gravy. A fourth likewise plump and well flavored, but discharging red gravy and this in various quantities. Some mutton when dressed appears covered with a thick, tough,

parchment-like integument; others with a membrane comparatively fine and flexible. But these, and some of the other qualities of mutton, may not be wholly owing to breed, but in part to the age and the state of fatness at the time of slaughter. Examined in this light, whether we consider the degree of fatness, or their natural propensity to a state of fatness, even at an early age, the improved breed of Leicestershire sheep appear with many superior advantages. The degree of fatness to which the individuals of this breed are capable of being raised will perhaps appear incredible to those who have not had an opportunity of being convinced by their own observation. ‘I have seen wedders,’ says Mr. Marshall, ‘of only two shear (two or three years old), so loaded with fat as to be scarcely able to make a run; and whose fat lay so much without the bone, it seemed ready to be shaken from the ribs on the smallest agitation. It is common for the sheep of this breed to have such a projection of fat upon the ribs, immediately behind the shoulder, that it may be easily gathered up in the hand as the flank of a fat bullock. Hence it has gained, in technical language, the name of the fore-flank; a point which a modern breeder never fails to touch, in judging of the quality of this breed of sheep. What is perhaps still more extraordinary, it is not rare for the rams, at least of this breed, to be ‘cracked on the back;’ that is, to be cloven along the top of the chine, in the manner fat sheep generally are upon the rump. This mark is considered as an evidence of the best blood. Extraordinary, however, as are these appearances while the animals are living, the facts are still more striking after they are slaughtered. At Litchfield, in February, 1785, I saw a fore-quarter of mutton, fatted by Mr. Princep of Croxall, which measured upon the ribs four inches of fat. It must be acknowledged, however, that the Leicestershire breed do not produce so much wool as most other long-wooled sheep.’

As the practice of *letting rams* by the season is become profitable, it may be useful to mention the method of rearing them. ‘The principal ram-breeders,’ says Mr. Marshall, ‘save annually twenty, thirty, or perhaps forty ram-lambs; castration being seldom applied in the first instance to the produce of a valuable ram; for in the choice of these lambs they are led more by blood, or parentage, than by form; on which, at an early age, little dependence can be placed. Their treatment from the time they are weaned, in July or August, until the time of shearing, the first week in June, consists in giving them every indulgence of keep, in order to push them forward for the show; it being the common practice to let such as are fit to be let the first season, while they are yet yearlings, provincially ‘sharhogs.’ Their first pasture, after weaning, is pretty generally, I believe, clover that has been mown early, and has got a second time into head; the heads of clover being considered as a most forcing food of sheep. After this goes off, turnips, cabbages, colewort, with hay, and (report says) with corn. Something considerable depends on the art of making up, not lambs only, but rams of all ages. Fat, like charity,

covers a multitude of faults; and besides is the best evidence of their fattening quality which their owners can produce (i. e. their natural propensity to a state of fatness), while in the fatness of the sharhogs is seen their degree of inclination to fat at an early age. Fattening quality being the one thing needful in grazing stock, and being found in some considerable degree at least to be hereditary, the fattest rams are of course the best; though other attachments, well or ill placed, as to form or fashionable points, will perhaps have equal or greater weight in the minds of some men, even in this enlightened age. Such shearlings as will not make up sufficiently as to form and fatness are either kept on to another year to give them a fair chance, or are castrated or butchered while sharhogs.’ From the first letting, about forty years ago, to the year 1780, the prices kept gradually rising from 15s. to a guinea, and from one to ten. In 1780 Mr. Bakewell let several at ten guineas each; and, what is rather inexplicable, Mr. Parkinson of Quarndon let one the same year for twenty-five guineas; a price which then astonished the whole country. From that time to 1786 Mr. Bakewell’s stock rose rapidly from ten to 100 guineas; and that year he let two-thirds of one ram (reserving one-third of the usual number of ewes to himself) to two principal breeders, for 100 guineas each, the entire services of the ram being rated at 300 guineas! Mr. Blakewell making that year, by letting twenty rams only, more than £1000! Since that time the prices have been still rising; 400 guineas have been repeatedly given. Mr. Bakewell this year (1789) makes, says Mr. Marshall, 1200 guineas by three rams (brothers we believe); 2000 of seven; and of his whole letting, full 3000 guineas! Besides this extraordinary sum, made by Mr. Bakewell, there are six or seven other breeders who make from 500 to 1000 guineas each. The whole amount of moneys produced that year in the Midland counties, by letting rams of the modern breed for one season only, is estimated by those who are adequate to the subject at the almost incredible sum of £10,000.

The *diseases* to which sheep are subject are, rot, red-water, foot-rot and hoving, seah, dun, rickets, fly-struck, flux, and bursting. The rot, which is a very pernicious disease, has of late engaged the attention of scientific farmers. But neither its nature nor its cause has yet been fully ascertained. Some valuable and judicious observations have, however, been made upon it, which may furnish an antidote for this malignant distemper, or be the means of leading others to some more efficacious remedy. Some have supposed the rot owing to the quick growth of grass or herbs that grow in wet places. But the constant practice of most farmers in the kingdom, who with the greatest security feed their meadows in the spring, when the grass shoots quick, and is full of juices, militates directly against this opinion. Mr. Arthur Young ascribes this disease to moisture. In confirmation of this opinion, which has been generally adopted, we are informed in the Bath Society papers (vol. 1. art. xlvi.) by a correspondent, that there was a

paddock adjoining to his park which had for several years caused the rot in most of the sheep which were put into it. In 1769 he drained it, and from that time his sheep were free from this malady. But there are facts which render it doubtful that moisture is the sole cause. We are told the dry limed land in Derbyshire will produce the rot as well as water meadows and stagnant marshes; and that in some wet grounds sheep sustain no injury for many weeks. On dissecting sheep that die of this disorder, a great number of insects called flukes (see FASCIOLA), are found in the liver. That these flukes are the cause of the rot therefore is evident; but to explain how they come into the liver is not so easy. It is probable that they are swallowed by the sheep along with their food or drink, while in the egg state. The eggs deposited in the tender germ are conveyed with the food into the stomach and intestines of the animals, whence they are received into the lacteal vessels, carried off in the chyle, and pass into the blood; nor do they meet with any obstruction until they arrive at the capillary vessels of the liver. Here, as the blood filtrates through the extreme branches, answering to those of the vena porta in the human body, the seconning vessels are too minute to admit the impregnated ova, which, adhering to the membrane, produce those animalculæ that feed upon the liver and destroy the sheep. They much resemble the flat fish called plaice, are sometimes as large as a silver two-pence, and are found both in the liver and in the pipe (answering to that of the vena cava), which conveys the blood from the liver to the heart. It is therefore easy to conceive that sheep may, on wet ground especially, take multitudes of these ova or eggs in with their food; and, that the stomach and viscera of the sheep being a proper *nidus* for them, they of course hatch, and, appearing in their fluke or last state, feed on the liver of the animal, and occasion this disorder. It is a singular fact that no ewe ever has the rot while she has a lamb by her side. The reason of this may be, that the impregnated ovum passes into the milk, and never arrives at the liver. The rot is fatal to sheep, hares, and rabbits, and sometimes to calves, but never infests animals of a larger size. Miller says that parsley is a good remedy for the rot in sheep. Perhaps a strong decoction of this plant, or the oil extracted from its seeds, might be of service. Salt is also a useful remedy. It seems to be an acknowledged fact that salt marshes never produce the rot. Salt indeed is pernicious to most insects. Common salt and water expel worms from the human body; and sea-weed, if laid in a garden, will drive away insects; but if the salt is separated by steeping it in the purest spring-water for a few days it abounds with animalculæ of various species. Lisle, in his book of husbandry, informs us of a farmer who cured his whole flock of the rot by giving each sheep a handful of Spanish salt for five or six mornings successively. In wet and warm seasons the prudent farmer will remove his sheep from the lands liable to rot. Those who have it not in their power to do this, may give each sheep a spoonful of common salt, with the same quantity of flour, in a quarter of a pint

of water, once or twice a-week. When the rot is recently taken, the same remedy, given four or five mornings successively will in all probability effect a cure. The addition of the flour and water (in the opinion of Mr. Price of Salisbury) will not only abate the pungency of the salt, but dispose it to mix with the chyle in a more gentle and efficacious manner. A farmer of a considerable lordship in Bohemia, visiting the hot-wells of Carlsbad, related how he preserved his flocks of sheep from the mortal distemper which raged in the wet year 1769, of which so many perished. His preservative was very simple and very cheap:—‘ He fed them every night, when turned under a shed, cover, or stables, with hashed fodder straw; and, by eating it greedily, they all escaped.’ ‘ Red-water is a disorder most prevalent on wet-grounds. I have heard,’ says Mr. Arthur Young, ‘ that it has sometimes been cured by tapping, as for a dropsy. This operation is done on one side of the belly towards the flank, just below the wool.’ ‘ The foot-rot and hoving, which is very common on low fenny grounds, is cured by keeping the part clean, and lying at rest in a dry pasture.’ The scab is a cutaneous disease, owing to an impurity of the blood, and is most prevalent in wet lands or in rainy seasons. It is cured by tobacco-water, brimstone, and alum, boiled together, and then rubbed over the sheep. If only partial, tar and grease may be sufficient. But the simplest and most efficacious remedy for this disease was communicated to the society for the Encouragement of Arts, &c., by Sir Joseph Banks:—‘ Take one pound of quicksilver, half a pound of Venice turpentine, half a pint of oil of turpentine, and four pounds of hog’s lard. Let them be rubbed in a mortar till the quicksilver is thoroughly incorporated with the other ingredients: for the proper mode of doing which, take the assistance of some apothecary. In using the ointment, begin at the head of the sheep, and, proceeding from between the ears along the back to the end of the tail, the wool is to be divided in a furrow till the skin can be touched; and, as the furrow is made, the finger slightly dipped in the ointment is to be drawn along the bottom of it, where it will leave a blue stain on the skin and adjoining wool: from this furrow similar ones must be drawn down the shoulders and thighs to the legs, as far as they are woolly; and, if the animal is much infected, two more should be drawn along each side parallel to that on the back, and one down each side between the fore and hind legs. Immediately after being dressed, it is usual to turn the sheep among other stock, without any fear of the infection being communicated; and there is scarcely an instance of a sheep suffering any injury from the application. In a few days the blotches dry up, the itching ceases, and the animal is completely cured: it is generally, however, proper not to delay the operation beyond Michaelmas. The hippobosca ovina, called in Lincolnshire sheep fagg, an animal well known to all shepherds, which lives among the wool, and is hurtful to the thriving of sheep both by the pain its bite occasions and the blood it sucks, is destroyed by this application, and the wool is not at all injured. Our wool buyers

purchase the fleeces on which the stain of the ointment is visible, rather in preference to others, from an opinion that the use of it having preserved the animal from being vexed either with the scab or faggs, the wool is less liable to the defects of joints or knots; a fault observed to proceed from every sudden stop in the thriving of the animal, either from want of food or from disease. This mode of curing is now so generally received that the scab, which used to be the terror of the farmers, and which frequently deterred the more careful of them from taking the advantage of pasturing their sheep in the fertile and extensive commons with which that district abounds, is no longer regarded with any apprehension: the most of them have their stock anointed in autumn, when they return from the common, whether they show any symptoms of scab or not; and, having done so, conclude them safe from infection. There are people who employ themselves in the business, and contract to anoint our large sheep at 5s. a score, insuring for that price the success of the operation; that is, agreeing, in case many of the sheep break out afresh, to repeat the operation gratis even some months afterwards.' The dunnt is a distemper caused by a bladder of water gathering in the head. No cure for this has yet been discovered. The rickets is a hereditary disease for which no antidote is known. The first symptom is a kind of light headedness, which makes the affected sheep appear wilder than usual when the shepherd or any person approaches him. He bounces up suddenly from his lare, and runs to a distance, as though he were pursued by dogs. In the second stage the principal symptom is the sheep's rubbing himself against trees, &c., with such fury as to pull off his wool and tear away his flesh. 'The distressed animal has now a violent itching in his skin, the effect of a highly inflamed blood; but it does not appear that there is ever any cutaneous eruption or salutary critical discharge. In short, from all circumstances, the fever appears now to be at its height.' The last stage of this disease 'seems only to be the progress of dissolution, after an unfavorable crisis. The poor animal, as condemned by Nature, appears stupid, walks irregularly (whence probably the name rickets), generally lies, and eats little; these symptoms increase in degree till death, which follows a general consumption, as appears upon dissection of the carcase; the juices and even solids having suffered a general dissolution.' To discover the seat and nature of this disease, sheep that die of it ought to be dissected. This is said to have been done by one gentleman, Mr. Beal; and he found in the brain or membranes adjoining a maggot about a quarter of an inch long, and of a brownish color. A few experiments might easily determine this fact. The fly-struck is cured by clipping the wool off as far as infected, and rubbing the dry parts with lime or wood ashes; currier's oil will heal the wounds, and prevent their being struck any more; or they may be cured with care without clipping, with oil of turpentine, which will kill all the vermin where it goes; but the former is the surest way. The flux is another disease to which sheep are subject. The best remedy is

said to be, to house the sheep immediately when this distemper appears, to keep them very warm, and feed them on dry hay, giving them frequent glisters of warm milk and water. The cause of that distemper is either their feeding on wet lands, or on grass that is become mossy by the lands having been fed many years without being ploughed. When the farmer perceives his sheep-walks to become mossy, or to produce bad grass, he should either plough or manure with hot lime, making kilns either very near or in the sheep-walks, because the hotter the lime is put on the sweeter the grass comes up, and that early in the year. Bursting, or as it is called in some places the blast, attacks sheep when driven into fresh grass or young clover. They overeat themselves, foam at the mouth, swell exceedingly, breathe very quick and short, then jump up, and instantly fall down dead. In this case, the only chance of saving their life is by stabbing them in the maw with an instrument made for the purpose. The instrument is a hollow tube, with a pointed weapon passing through it. A hole is made with the pointed weapon; which is immediately withdrawn, and the hole is kept open by inserting the tube till the wind is discharged. Sheep are infested with worms in their nose called *estrus ovis*, and produced from the egg of a large two-winged fly. See *Oestrus*. The frontal sinuses above the nose in sheep and other animals are the places where these worms live and attain their full growth. These sinuses are always full of a soft white matter, which furnishes these worms with a proper nourishment, and are sufficiently large for their habitation; and when they have here acquired their destined growth, in which they are fit to undergo their changes for the fly-state, they leave their old habitation, and, falling to the earth, bury themselves there; and, when these are hatched into flies, the female, when she has been impregnated by the male, knows that the nose of a sheep or other animal is the only place for her to deposit her eggs, in order to their coming to maturity. Mr. Vallisnieri, to whom the world owes so many discoveries in the insect class, is the first who has given any true account of the origin of these worms, though the creatures themselves were very early discovered. The fly produced from this worm has all the time of its life a very lazy disposition, and does not like to make any use either of its legs or wings. Its head and corset together are about as long as its body, which is composed of five rings, streaked on the back; a pale yellow and brown are there disposed in irregular spots; the belly is of the same colors but they are there more regularly disposed, for the brown here makes three lines, one in middle and one on each side, and all the intermediate spaces are yellow. The wings are nearly of the same length with the body, and are a little inclined in their position, so as to lie upon the body: they do not, however, cover it; but a naked space is left between them. The ailerons, or petty wings, which are found under each of the wings, are of a whitish color, and perfectly cover the balancers, so that they are not to be seen without lifting up these. The fly will live two months after it is first produced, but will take no nourishment of

any kind ; and possibly it may be of the same nature with butterflies, which never take any food during the whole time of their living in that state.—Reaumer, Hist. Ins. vol. iv. p. 552, &c.

The following instructions for purchasing sheep may be useful to our country readers :—The farmer should always buy his sheep from a worse land than his own, and they should be big-boned, and have a long greasy wool, curling close and well. These sheep always breed the finest wool, and are also the most approved of by the butcher for sale in the market. For the choice of sheep to breed, the ram must be young, and his skin of the same color with his wool, for the lambs will be of the same color with his skin. He should have a large long body; a broad forehead, round, and well rising; large eyes; and straight and short nostrils. The polled sheep, that is, those which have no horns, are found to be the best breeders. The ewe should have a broad back; a large bending neck; small, but short, clean, and nimble legs; and a thick, deep wool covering her all over. To know whether they be sound or not the farmer should examine the wool that none of it be wanting, and see that the gums be red, the teeth white and even, and the brisket-skin red, the wool firm, the breath sweet, and the feet not hot. Two years old is the best time for beginning to breed; and their first lambs should not be kept too long, to weaken them by suckling, but ~~be sold~~ as soon as convenient. They will breed advantageously till they are seven years old. Farmers have a method of knowing a sheep's age, as a horse's is known, by the mouth. When a sheep is one shear, as they express it, it has two broad teeth before; when it is two shear it will have four, when three six, and when four eight. After this their mouths begin to break. The difference of land makes a very great difference in the value of sheep. The fat pastures breed straight tall sheep, and the barren hills and downs breed square short ones; woods and mountains breed tall and slender sheep; but the best of all are those bred upon new ploughed land and dry grounds. On the contrary, all wet and moist lands are bad for sheep, especially such as are subject to be overflowed, and to have sand and dirt left on them. The salt marshes are, however, an exception to this general rule, for their saltiness makes amends for their moisture; salt, by reason of its drying quality, being of great advantage to sheep.

Rams, previous to the season, are reduced from the cumbrous fat state in which they are shown. The usual time of sending them out is the middle of September. They are conveyed in carriages of two wheels with springs, or hung in slings, twenty or thirty miles a-day, sometimes to the distance of 200 or 300 miles. They are not turned loose among the ewes, but kept apart in a small enclosure, where a couple of ewes only are admitted at once. When the season is over, every care is taken to make the rams look as fat and handsome as possible. In the choice of ewes the breeder is led by the same criteria as in the choice of rams. Breed is the first object of consideration. Excellency in any species

or variety of live stock cannot be attained with any degree of certainty, let the male be ever so excellent, unless the females employed likewise inherit a large proportion of the genuine blood, be the species or variety what it may. Hence no prudent man ventures to give the higher prices for the Dishley rams, unless his ewes are deeply tinctured with the Dishley blood. Next to breed is flesh, fat, form and wool. After the lambs are weaned, the ewes are kept in common feeding places, without any alteration of pasture, previous to their taking the ram. In winter they are kept on grass, hay, turnips, and cabbages. As the heads of the modern breeder are much finer than most others, the ewes lamb with less difficulty. The female lambs, on being weaned, are put to good keep, but have not such high indulgence shown them as the males, the prevailing practice being to keep them from the ram the first autumn. At weaning time, or previously to the admission of the ram, the ewes are culled, to make room for the thaves or shearlings, whose superior blood and fashion entitle them to a place in the breeding stock. In the work of culling, the ram-breeder and the mere grazier go by somewhat different guides. The grazier's guide is principally age, seldom giving his ewes the ram after they are four shear. The ram-breeder, on the contrary, goes chiefly by merit; a ewe that has brought him a good ram or two is continued in the flock so long as she will breed. There are instances of ewes having been prolific to the tenth or twelfth year; but in general the ewes of this breed go off at six or seven shear. In the practice of some of the principal ram-breeders, the culling ewes are never suffered to go out of their hands until after they are slaughtered, the breeders not only fattening them, but having them butchered, on their premises. There are others, however, who sell them; and sometimes at extraordinary prices. Three, four, and even so high as ten, guineas each have been given for these outcasts. There are in the flocks of several breeders ewes that would fetch at auction twenty guineas each. Mr. Bakewell is in possession of ewes which, if they were put up to be sold to the best bidder, would, it is estimated, fetch no less than fifty each; and perhaps, through the present spirit of contention, much higher prices. As to the time of putting the rams to the ewes, the farmer must consider at what time of the spring his grass will be fit to maintain them and their lambs, and whether he has turnips to do it till the grass comes; for very often both the ewes and lambs are destroyed by the want of food; or if this does not happen, if the lambs are only stinted in their growth by it, it is an accident that they never can recover. The ewe goes twenty weeks with lamb, and according to this it is easy to calculate the proper time. Where there are not enclosures to keep them in, they should year in January, that the lambs may be strong by May-day, and be able to follow the dam over the fallows and water-furrows; but the lambs that come so early must have a great deal of care taken of them; and so indeed should all other lambs at their first falling; else, while they are weak, the crows and magpies will pick their eyes out.

SHEEPHAVEN, a harbour on the north coast of the county of Donegal, Ireland, situated west of the Mulroy, and separated from it by a long and narrow peninsula. The surrounding country is mountainous and thinly inhabited; nor is there any town of consequence in the neighbourhood. Dunfanaghy, near Hornhead, is no more than a village, though ruins near it seem to indicate that it was formerly much larger. The siliceous sand found in this district is of excellent quality for making glass, and it is carried to Belfast for that purpose. ‘About a century ago, an elegant edifice, according to the taste of that age,’ says Dr. W. Hamilton, was built on the peninsula, between the harbours of Sheephaven and Mulroy, which at present stands ‘like Tadmor of the east, the solitary wonder of a surrounding desert.’ The gardens are totally denuded of trees and shrubs by the fury of the western winds; their walls, unable to sustain the mass of overbearing sands, have bent before the accumulated pressure; and, overthrown in numberless places, have given free passage to this restless enemy of all fertility. The courts, the flights of steps, the terraces, are all involved in equal ruin; and their limits only discoverable by tops of embattled walls, visible amid hills of sand. The mansion itself, yielding to the unconquerable fury of the tempest, approaches fast to destruction; the freighted whirlwind, howling through every avenue and crevice, bears incessantly along its drifted burden, which has already filled the lower apartments of the building, and begins now to rise above the once elevated thresholds. Fields, fences, villages, involved in common desolation, are reduced to one undistinguishable scene of sterile uniformity, and 1200 acres of land are said thus to have been buried within a short period in irrecoverable ruin.—Transactions of the Irish Academy, vol. vi.

SHEER, *adj.* Saxon. *reyn.* Pure; clear; unmingled: clean; quick; at once.

If she say, I am not fourteen pence on the score for sheer ale, score me up for the lying’st rogue in Christendom. *Shakspeare.*

Thrown by angry Jove

*Sheer* o'er the crystal battlements; from morn  
To noon he fell: from noon to dewy eve,  
A summer’s day; and with the setting sun  
Dropped from the zenith, like a falling star. *Milton.*

The sword of Satan with steep force to smite  
Descending, and in half cut *sheer*. *Id.*

*Sheer* argument is not the talent of the man; little  
wrested sentences are the bladders which bear him  
up, and he sinks downright, when he once pretends  
to swim without them. *Attberry.*

SHEERGOTTA, a town of Hindostan in the province of Bahar, stands at the foot of a steep and narrow pass through the Ramgur hills, being part of the great military road from Calcutta to Benares. It takes its name from the number of tigers which formerly infested the route. Long.  $84^{\circ} 55' E.$ , lat.  $24^{\circ} 32' N.$

SHEERHORN, a lofty mountain of Switzerland, in the canton of Uri, ten miles south-east of Altorf. It rises to the height of 10,700 feet, and at the top is divided into two parts. It is covered with glaciers of great extent. Long.  $8^{\circ} 40' 5'' E.$ , lat.  $46^{\circ} 49' 50'' N.$

SHEERNESS, a market-town on the north-west point of Sheppey-Island, where the Medway joins the Thames, forty-six miles and a half east from London, in the parish of Minster. In 1667 this place was taken by the Dutch. It has now a regular fortification and garrison, under a governor, lieutenant-governor, fort-major, and other officers, and such a line of heavy cannon, commanding the mouth of the river, as to bid defiance to any force that may attempt to pass it. The harbour, dock-yard, and public buildings have of late been much enlarged and improved; a chapel has also been erected at the expense of government. The town contains several good streets. Here is an ordnance-office, with apartments for the different officers, all ordnance stores being delivered here to the fleet stationed at the Nore; here is also a yard for building ships, and a dock intended chiefly for repairing. It has a neat chapel of ease to the mother church. Market on Saturday.

SHEERS, a name given to an engine used to hoist or displace the lower masts of a ship. The sheers employed for this purpose in the royal navy are composed of several long masts, whose heels rest upon the side of the hulk, and having their heads declining outward from the perpendicular, so as to hang over the vessel whose masts are to be fixed or displaced. The tackles, which extend from the head of the mast to the sheer-heads, are intended to pull in the latter toward the mast head, particularly when they are charged with the weight of a mast after it is raised out of any ship, which is performed by strong tackles depending from the sheer-heads. The effort of these tackles is produced by two capsterns, fixed on the deck for this purpose. In merchant ships this machine is composed of two masts or props, erected in the same vessel wherein the mast is to be planted, or whence it is to be removed. The lower ends of these props rest on the opposite sides of the deck, and their upper parts are fastened across, so as that a tackle which hangs from the intersection may be almost perpendicularly above the station of the mast to which the mechanical powers are applied. These sheets are secured by stays which extend forward and aft to the opposite extremities of the vessel.

SHEET, *n. s. & v. a.* Sax. *recaer.* A large broad piece of linen; any thing expanded; a single fold of such a thing: to furnish with sheets.

He saw heaven opened, and a vessel descending unto him, as a great sheet, knit at the four corners. *Acts x. 11.*

If I die before thee, shroud me  
In one of these same sheets. *Shakspeare*

As much love in rhyme  
As could be crammed up in a sheet of paper,  
Writ on both sides the leaf, margin and all. *Id.*

Like the stag, when snow the pasture sheets,  
The bark of trees thou browsedst. *Id.*

The little word behind the back, and undoing  
whisper, like pulling off a sheet-rope at sea, slackens  
the sail. *Suckling*

Fierce Boreas drove against his flying sails,  
And rent the sheets. *Dryden.*

Some unequal bride in nobler sheets  
Receives her lord. *Id.*

When I first put pen to paper, I thought all I should have to say would have been contained in one sheet of paper.

*Locke.*

I let the refracted light fall perpendicularly upon a sheet of white paper upon the opposite wall.

*Newton's Opticks.*

To this the following sheets are intended for a full and distinct answer.

*Waterland.*

SHEET, in sea-language, a rope fastened to one or both the lower confines of a sail, to extend and retain it in a particular station. When a ship sails with a lateral wind, the lower corner of the main and fore-sail are fastened by a tack and a sheet; the former being to windward, and the latter to leeward; the tack, however, is entirely diffused with a stern-wind, whereas the sail is never spread without the assistance of one or both of the sheets. The stay-sails and studding-sails have only one tack and one sheet each; the stay-sail tacks are always fastened forward, and the sheet drawn aft; but the studding-sail tack draws the under clew of the sail to the extremity of the boom, whereas the sheet is employed to extend the inmost.

SHEFFIELD (John), duke of Buckingham, an eminent writer of the seventeenth and eighteenth centuries, of great personal bravery, and an able minister of state, was born about 1650. He lost his father at nine years of age, and his mother marrying lord Ossulston, the care of his education was left to a governor, who neglected it. Finding himself deficient in many parts of literature, he resolved to devote a certain number of hours every day to his studies; and thereby improved himself to a high degree of learning. He entered a volunteer in the second Dutch war; and was in that famous naval engagement where the duke of York commanded as admiral; on which occasion he behaved so gallantly that he was appointed commander of the Royal Catherine. He afterwards made a campaign in the French service under M. de Turenne. As Tangier was in danger of being taken by the Moors, he offered to head the forces which were then sent to defend it; and accordingly was appointed to command them. He was then earl of Mulgrave, and one of the lords of the bed-chamber to king Charles II. The Moors retired on the approach of the king's forces; and the result was the blowing up of Tangier. He continued in several great posts during the reign of king James II., till that unfortunate prince was de-throned. Lord Mulgrave, though he paid his respects to king William before he was advanced to the throne, yet did not accept of any post in the government till some years after. In the sixth year of William and Mary he was created marquis of Normanby. He was one of the most active and zealous opposers of the bill which took away Sir John Fenwick's life; and exerted the utmost vigor in carrying through the treason bill, and the bill for triennial parliaments. He had some considerable posts under king William, and enjoyed much of his favor and confidence. In 1702 he was sworn lord privy seal; and in the same year was appointed one of the commissioners to treat of an union between England and Scotland. In 1703 he was created duke of Normanby, and soon after duke of Buckingham.

In 1711 he was made steward of the household to queen Anne, and president of the council. During her reign he was but once out of employment; when he resigned, being attached to Tory principles. He was instrumental in the change of the ministry in 1710. A circumstance that reflects the highest honor on him is the vigor with which he acted in favor of the unhappy Catalans, who afterwards were so inhumanly sacrificed. He was survived by only one legitimate son (who died at Rome in 1735); but left several natural children. His worst enemies allow that he lived on very good terms with his last wife, natural daughter to king James II., the late duchess of Buckingham, a lady who always behaved with a dignity suitable to the daughter of a king. He died in 1721. He was admired by the poets of his age; by Dryden, Prior, and Garth. His Essay on Poetry was applauded by Addison, and his Rehearsal is still universally admired, as a piece of true and original satire. His writings were splendidly printed in 1723, in 2 vols. 4to; and have since been re-printed in 1729, in 2 vols. 8vo. The first contains his poems on various subjects; the second his prose works, which consist of historical memoirs, speeches in parliament, characters, dialogues, critical observations, essays, and letters. The edition of 1729 is castigated; some particulars relating to the Revolution in that of 1723 having given offence.

SHEFFIELD, a market-town in the West Riding of Yorkshire, at the junction of the rivers Don and Sheaf, thirty-six miles south of Leeds, and 162 N. N. W. of London, celebrated throughout Europe for all kinds of hardware, cutlery, and plated goods. It has a singular appearance, from its occupying a long hill, and extending over the adjoining valleys, being almost enveloped in the smoke from its numerous fire-engines, foundries, &c. The three churches, St. Peter's, St. Paul's, and St. James's, erected on a hill, have a fine effect; their spires overtop the whole town, and look still more majestic at a small distance, by the intervening atmosphere being almost continually loaded with sooty exhalations. The extent of the town each way is about three-quarters of a mile. The streets are in general wide, well-built, open, clean, and lighted by gas. The slaughter-houses are built close to the river. Over each of the rivers is a good stone bridge; that over the Don, called the Lady's Bridge, consists of three arches, and was widened and repaired in 1768. That over the Sheaf consists of one arch, erected in 1769. On the eastern side of the Sheaf stands the duke of Norfolk's hospital, erected in 1670, consisting of two quadrangles of eighteen chambers in each, for eighteen poor men, and eighteen poor women. It has a neat chapel. There is another hospital, erected in 1703, for the benefit of sixteen poor cutlers' widows; and a good free grammar and charity schools. Here are nine different meeting-houses for dissenters, and a Roman Catholic chapel.

Between the rivers Don and Sheaf, in the north-eastern part of the town, anciently stood a castle of a triangular form; this castle surrendered to the parliament forces in 1644, and was demolished. The market-place, which is exten-

sive and commodious, was erected by the duke of Norfolk, who is nearly the sole proprietor of the town. Here is a neat theatre, and assembly room. In the south-east corner of Trinity church-yard is the old town-hall; a new town-house has lately been erected, handsomely built with stone. Here are also a general infirmary, commodious military barracks, and two excellent schools on the Bell and Lancasterian system. From the convenience of the rivers and adjoining coal mines, the whole of the heavy work has of late years been performed by machinery, and its workmen have made such improvements in their trade that they are now able to undersell every other market. The nature of their manufactures gives the town a very sombre appearance, and the houses all look black from the continual smoke. A canal has been cut to the verge of the town, which, with the navigation of the Don, conveys the manufactures of Sheffield to all parts of the kingdom. On the south side of Trinity church-yard is the cutlers' hall, erected in 1725. The corporation of cutlers are styled 'The Company of Cutlers of Hallamshire, and is governed by a master, two wardens, and two assistants; but the public affairs of the town are under seven of the principal inhabitants, who are termed regents or collectors. The town is well supplied with water, by means of pipes, and at a moderate rate. Here are two banking-houses Markets Tuesday and Saturday. Fairs Tuesday after Whitsun week, and November 28th. The old church of the Holy Trinity, a fine ancient Gothic structure, is a vicarage. The new churches are curacies. Patron, the vicar.

SHEFFIELDIA, in botany; a genus of plants belonging to the class of pentandria, and to the order of monogynia. The corolla is bell-shaped; the filaments are ten, of which every second is barren. The capsule consists of one cell, which has four valves. There is only one species, viz. *S. repens*.

SHEIK, in the oriental customs, the person who has the care of the mosques in Egypt; his duty is the same as that of the imams at Constantinople. There are more or fewer of these to every mosque, according to its size or revenue. One of these is head over the rest, and answers to a parish priest with us; and has under him, in large mosques, the readers, and people who cry out to go to prayers; but in small mosques the sheik is obliged to do all this himself. In such it is their business to open the mosque, to cry to prayers, and to begin their short devotions at the head of the congregation, who stand rank and file in great order, and make all their motions together. Every Friday the sheik makes an harangue to his congregation.

SHEIK-BELLET, an officer in the oriental nations. In Egypt the sheik-bellet is the head of the city, and is appointed by the pacha. The business of this officer is to take care that no innovations be made which may be prejudicial to the Porte, and that they send no orders which may hurt the liberties of the people. But all his authority depends on his credit and interest, not his office: for the government of Egypt is of such a kind that often the people of the least power by their posts have the greatest influence; and a caita of the Janizaries or Arabs, and sometimes

one of their meanest officers, an oda basha, finds means, by his parts and abilities, to govern all things.

SHEKEL, n. s. Heb. שֶׁקֶל. An ancient Jewish coin equal to four Attic drachms, or four Roman denarii, value about 2s. 6d. sterling.

The Jews, albeit they detested images, yet imprinted upon their *sheckle* on one side the golden pot which had the manna, and on the other Aaron's rod.

Camden.

The huge iron head six hundred *shekels* weighed,  
And of whole bodies but one wound it made:  
Able death's worse command to overdoe,  
Destroying life at once and carcase too.

Cowley.

This coat of mail weighed five thousand *shekels* of brass.

SHEKOABAD, a considerable town of Hir doston in the province of Agra. It was formerly fortified. The vicinity produces very fine indigo, in which, and cotton, it carries on a good trade. This town is said to have been founded by the unfortunate Dara Sheko, the elder brother of Aurungzebe. Long. 78° 38' E., lat. 27° 6' N.

SHELBY, a county of the United States, in Kentucky, bounded north by Henry, west by Bullet, east by Franklin, and south by Nelson. It is fertile, and copiously watered by the creeks which run into Salt River.

SHELBYVILLE, the principal town of Shelby county, Kentucky, situated on Brashan's Creek, twelve miles above its junction with Salt River.

SHELDON (Gilbert), archbishop of Canterbury, an eminent and munificent English prelate, born in 1598. He was entered of Trinity College, Oxford, in 1613, and in 1622 was elected fellow of All Souls, and became chaplain to lord Coventry, keeper of the great seal, who made him a prebendary of Gloucester, and recommended him to king Charles I. The king made him vicar of Hackney, and rector of Ickford and Newington. In 1635 he was chosen warden of All Souls. During the civil wars, he continued attached to the king, and attended as one of his commissioners at the treaty of Uxbridge, where he argued warmly for the king and the church. Hence he was afterwards imprisoned by the parliament for six months, and deprived of his wardenship and lodgings. He was liberated by the reforming committee, October 24th, 1648, on condition that he should not come within five miles of Oxford. On the Restoration he was replaced in his wardenship, made master of the Savoy, dean of the chapel royal, and bishop of London; and in 1663 archbishop of Canterbury. In 1667 he was chosen chancellor of the University of Oxford, but lost king Charles II.'s favor by honestly advising him to dismiss his mistress, Barbara Villiers. He died November 9th, 1677, aged eighty. He spent no less than £60,000 in public and private charities.

SHELF, n. s. { Sax. *recylf*; Belg. *scelf*. A SHELFY, adj. } board fixed to lay any thing on; a sand-bank or rock in the sea.

About his shelves

A beggarly account of empty boxes. Shakspeare.

Her chamber is aloft, far from the ground;  
And built so shelving, that one cannot climb it  
Without apparent hazard of his life.

ta.

**SHELL**, among miners, the same with what they otherwise call fast ground or fast country; being that part of the internal structure of the earth which they find lying even and in an orderly manner, and evidently retaining its primitive form and situation.

**SHELLEY**, Percy Bysshe, the eldest son of Sir Timothy Shelly, Sussex, was born at Field-place, in that county, August 4, 1792. He was sent to Eton, whence he was early removed to Oxford. This removal was owing to his eccentricity of character, which led him to neglect the studies and violate the rules of the school, and finally resulted in his expulsion from Oxford. His family, naturally offended with his conduct, and not less with his free opinions on matters of religion, was still further estranged by an ill-assorted marriage. The result was very unfortunate, for after the birth of two children, a separation took place by mutual consent; and the death of the lady soon after exposed him to much obloquy. On the decease of his first wife, he married Miss Godwin, daughter of the celebrated author of Political Justice, by Mary Wollstonecraft, and soon after retired to Marlow, in Buckinghamshire, where he wrote his Revolt of Islam. About this time, application was made by his family to deprive him of the guardianship of his two children, a boy and a girl, on the ground of his atheistical and sceptical notions, and certain dangerous opinions respecting the intercourse of the sexes. The application succeeded, principally owing to a juvenile production, called Queen Mab, written while at Oxford, and published without the consent of the author. This event caused him much uneasiness, and probably induced him to quit England, and repair, with his second wife and their children, to Italy, where he renewed an acquaintance with Lord Byron, to whom he had become known during a former visit to the continent. With him and Leigh Hunt, Shelley joined in a periodical miscellany, published in London, entitled The Liberal. This publication, which contained the Vision of Judgment, by Lord Byron, and other original productions, was interrupted by the untimely death of Mr. Shelley, who was drowned in his return from Leghorn to his house, on the gulf of Lerici, in the bay of Spezia, by the wreck of his sailing boat, in a sudden storm, July, 1822. A few days afterwards, the body was washed on shore near Via Reggio, and was subsequently reduced to ashes by his friends. Shelley's remains were deposited in the Protestant burial-ground at Rome. At the time of his decease, Mr. Shelley had nearly completed his thirtieth year. His principal works are The Revolt of Islam; Alastor, or the Spirit of Solitude; The Cenci, a tragedy (see *Cenci Beatrice*); Adonias; Hellas; Prometheus Unbound; and a posthumous volume of poems.

**SHELL**, *n. s., v. a., &* Saxon *reyll*, *recall*; **SHELL'DUCK**, [v. n.] Belg. *schelle*. The **SHELL'FISH**, } crustaceous covering **SHELLY**, *adj.* } of certain animals and vegetables; covering of an egg; the outer part of any thing; hence a musical instrument (in poetic language); a superficial part: to shell is,

take out of a shell; to fall off as broken shells; to cast the shell: a shell-duck is a kind of wild duck: shell-fish, fish protected by shells; shelly, abounding in, or consisting of, shells.

Think him a serpent's egg,  
Which hatched would, as his kind, grow mischievous,  
And kill him in the *shell*. *Shakspeare. Julius Caesar.*

Changed loves are but changed sorts of meats;  
And, when he hath the kernel eat,  
Who doth not throw away the *shell*? *Donne.*

Her women wear  
The spoils of nations in an ear;  
Changed for the treasure of a *shell*,  
And in their loose attires do swell. *Ben Jonson's Catilene.*

**Albion**  
Was to Neptune recommended;  
Peace and plenty spread the sails;  
Venus, in her *shell* before him,  
From the sands in safety bore him. *Dryden's Albion.*

Less than a god they thought there could not dwell  
Within the hollow of that *shell*,  
That spoke so sweetly. *Dryden.*

Whatever we fetch from underground is only what is lodged in the *shell* of the earth. *Locke.*

To preserve wild ducks, and *shellducks*, have a place walled in with a pond. *Mortimer's Husbandry.*

**SHELLS**, in natural history, are hard crustaceous, or bony coverings, with which certain animals are defended, and thence called shell fish. See PHYSIOLOGY and CONCHENOLOGY.

M. Herissant, in the Memoirs of the Academy of Sciences, 1766, suggested that the structure of shells was organic. In the numerous experiments that he made on an immense number, and a very great variety, of animal shells, he constantly found that they were composed of two distinct substances; one of which is a cretaceous or earthy matter; and the other appeared, from many experiments made upon it by burning, distillation, and otherwise, to be evidently of an animal nature. These two substances he dexterously separated from each other by a very easy chemical analysis; by the gentle operation of which they were exhibited distinctly to view, without any material alteration from the action of the solvent, or instrument employed for that purpose. On an entire shell, or a fragment of one contained in a glass vessel, he poured a sufficient quantity of the nitrous acid, considerably diluted either with water or spirits of wine. After the liquor has dissolved all the earthy part of the shell (which may be collected after precipitation by a fixed or volatile alkali), there remains floating in it a soft substance, consisting of innumerable membranes of a retiform appearance, and disposed in different shells, in a variety of positions, which constitutes the animal part of it. This, as it has not been affected by the solvent, retains the exact figure of the shell; and, on being viewed through a microscope, exhibits satisfactory proofs of a vascular and organic structure. He shows that this membranous substance is an appendix to the body of the animal, or a continuation of the tendinous fibres that compose the ligaments by which it is

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fixed to its shell; and that this last owes its hardness to the earthy particles conveyed through the vessels of the animal, which fix themselves into, and incrust, as it were, the meshes formed by the reticular filaments of which this membranous substance is composed. In the shell called porcelaine, in particular, the delicacy of these membranes was so great, that he was obliged to put it into spirit of wine, to which he had the patience to add a single drop of spirit of nitre day by day, for the space of two months; lest the air generated, or let loose by the action of the acid on the earthy substance, should tear the compages of its fine membranous structure into shatters; as it certainly would have done in a more hasty and less gentle dissolution. The delicate reticulated film left after this operation had all the tenuity of a spider's web; and accordingly he does not attempt to delineate its organisation. In other shells he employed even five or six months in demonstrating the complicated membranous structure of this animal substance by this kind of chemical anatomy. In general, however, the process does not require much time.

The singular regularity, beauty, and delicacy in the structure of the shells of animals, and the variety and brilliancy in the coloring of many of them, at the same time that they strike the attention of the most incurious observers, have at all times excited philosophers to enquire into and detect, if possible, the causes and manner of their formation. But the attempts of naturalists, ancient and modern, to discover this process, have constantly proved unsuccessful. M. de Reaumur hitherto appears alone to have given a plausible account, at least, of the formation of the shell of the garden-snail in particular, founded on a course of very ingenious experiments, related in the Mem. de l'Acad. 1709. He then endeavours to show that this substance is produced merely by the perspirable matter of the animal condensing and afterwards hardening on its surface, and accordingly taking the figure of its body, which has performed the office of a mould to it; in short, that the shell of a snail, and, as he supposed, of all other animals possessed of shells, was only the product of a viscous transudation from the body of the animal, containing earthy particles united by mere juxtaposition. This hypothesis, however, is liable to very great and insurmountable difficulties, if we apply it to the formation of some of the most common shells: for how, according to this system, it may be asked, can the oyster, for instance, considered simply as a mould, form to itself a covering so much exceeding its own body in dimensions?

On this subject Dr. Thomson has the following remarks in his System of Chemistry, vol. iv. p. 366—368. ‘The crustaceous coverings of animals, as of echini, crabs, lobsters, prawns, and craw-fish, and also the shells of eggs, are composed of the same ingredients as bones (see BONES); but in them the proportion of carbonate of lime far exceeds that of phosphate. Thus 100 parts of lobster crust contain sixty carbonate of lime; fourteen phosphate, and twenty-six cartilage; 100 parts of crawfish crust

contain sixty carbonate of lime, twelve phosphate of lime, and twenty-eight cartilage; 100 parts of hen's egg shells contain 89·6 carbonate of lime, 5·7 phosphate of lime, and 4·7 animal matter. Hatchett found traces of phosphate of lime also in the shells of snails. The shells of sea animals may be divided into two classes. The first has the appearance of porcelain, their surface is enamelled, and their texture is often slightly fibrous. Mr. Hatchett has given them the name of porcellaneous shells. The second kind of shells is known by the name of mother-of-pearl. It is covered with a strong epidermis, and below it lies the shelly matter in layers. The shell of the fresh water mussel, mother-of-pearl, heliotis iris, and turbo olearius, are instances of these shells.’

Of the many singular configurations and appearances of the membranous part of different shells, which are described in M. Herissant's memoir, and are delineated in several well executed plates, we shall mention only, as a specimen, the curious membranous structure observed in the laminae of mother-of-pearl, and other shells of the same kind, after having been exposed to the operation of the author's solvent. Beside the great variety of fixed colors, with which he found the animal filaments of these shells adorned, the shell presents a succession of rich and changeable colors, the production of which he explains from the configurations of their membranes. These brilliant decorations are produced at a very small expense. The membranous substance is plaited and rumpled in such a manner that its exterior laminae, incrusted with their earthy and semi-transparent matter, form an infinite number of little prisms, placed in all kinds of directions, which refract the rays of light, and produce all the changes of color observable in these shells. With respect to the figures and colors of shells, river shells have not so agreeable or diversified a color as the land and sea shells; but the variety in the figure, colors, and other characters of sea shells, is almost infinite. The number of distinct species in the cabinets of the curious is very great; and doubtless the deep bottoms of the sea, and the shores yet unexplored, contain multitudes still unknown to us. It is rare to find any two shells exactly alike in all respects. This wonderful variety, however, is not all the produce of one sea or one country. Bonani observes that the beautiful shells come from the East Indies and from the Red Sea. The sun, by the great heat that it gives to the countries near the line, exalts the colors of the shells produced there, and gives them a lustre and brilliancy that those of colder climates generally want.

Of fossil shells, or those buried at great depths in the earth, some are found remaining almost entirely in their native state, but others are variously altered by being impregnated with particles of stone and of other fossils; in the place of others there is found mere stone or spar, or some other native mineral body, expressing all their lineaments in the most exact manner, as having been formed wholly from them, the shell having been first deposited in some solid matrix, and thence dissolved by very slow degrees, and

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this matter left in its place, on the cavities of stone and other solid substances, out of which shells had been dissolved and washed away, being afterwards filled up less slowly with these different substances, whether spar or whatever else; these substances, so filling the cavities, can necessarily be of no other form than that of the shell, to the absence of which the cavity was owing, though all the finer fineaments may not be so exactly expressed. Besides these, we have also in many places masses of stones formed within various shells; and these having been received into the cavities of the shells while they were perfectly fluid, and having therefore nicely filled all their cavities, must retain the perfect figures of the internal part of the shell, when the shell itself should be worn away or perished from their outside. The various species we find of these are, in many genera, as numerous as the known recent ones: and as we have in our own island, not only the shells of our own shores, but those of many other very distant ones, so we have also many species, and those in great numbers, which are, in their recent state, the inhabitants of other, yet unknown seas and shores. The cockles, mussels, oysters, and the other common bivalves of our own seas, are very abundant: but we have also an amazing number of the nautilus kind, particularly of the nautilus græcorum, which, though a shell not found living in our own or any neighbouring seas, yet is found buried in all our clay pits about London and elsewhere; and the most frequent of all fossil shells in some of our counties are the concha ammonis, which yet we know not of in any part of the world in their recent state. Of this sort also are the cornua ammonis and the gryphiteæ, with several of the echinitæ and others. The exact similitude of the known shells, recent and fossil, in their several kinds, will by no means suffer us to believe that these, though not yet known to us in their living state, are, as some have idly thought, a sort of lusus naturæ. It is certain that, of the many known shores, very few, not even those of our own island, have been yet carefully searched for the shell-fish that inhabit them; and as we see in the nautilus græcorum an instance of shells being brought from very distant parts of the world to be buried here, we cannot wonder that yet unknown shores, or the unknown bottoms of deep seas, should have furnished us with many unknown shell-fish, which may have been brought with the rest; whether that were at the time of the general deluge (see DELUGE), or the effect of any other catastrophe of a like kind, or by whatever other means, to be left in the yet unhardened matter of our stony and clayey strata.

Shells are subject to several imperfections, natural and accidental. The natural defects are the effects of age or sickness in the fish. Connoisseurs pretend to be able to distinguish a shell taken up with the fish alive from one found on the shores; they call the first a living, the second a dead shell; and say that the colors are always much fainter in the dead shells. Shells are also subject to other deformities, such as morbid cavities, or protuberances. When the shell is valuable, these faults may be hid, and

much added to the beauty of the specimen, without injuring it as an object of natural history, which should always be the great end of collecting these things. The cavities may be filled up with mastic, dissolved in spirit of wine, or with isinglass; these substances must be either colored to the tinge of the shell, or else a pencil dipped in water colors must finish them up to the resemblance of the rest; and then the whole shell being rubbed over with gum-water, or with the white of an egg, scarcely any eye can perceive the artifice: the same substances may also be used to repair the battered edge of a shell, provided the pieces chipped off be not too large. And, when the excrescences of a shell are faulty, they are to be taken down with a fine file.

On the coast of *Guinea* there is a prodigious quantity of that small species of porcelain which is used there as money; and there is another species all over white: the women make bracelets of these, and the people of the Levant adorn their hair with them. The coast of Zanguebar is very rich in shells; particularly large porcelains of great beauty; the nux maris, or sea-nut, and all the species of nautili. The Canary isles abound with the murices; Madeira abounds with echini; and the auris marina is nowhere more abundant. The Red Sea is beyond all other parts of the world abundant in shells; scarcely any kind is wanting there.

*America* affords many very elegant shells. Panama is famous for cylinders or rhombi, good porcelains, and a very fine species of dolium, or concha globose called the Panama purple shell. About Brasil, and in the gulf of Mexico, there are murices and dolia of extreme beauty; also a great variety of porcelains, Purpuræ, pectens, neritæ, bucardia, or heart-shells, and elegant limpets. The isle of Cayenne affords one of the most beautiful of the buccinum kind, and the Midas ear is found principally about this place. Jamaica and Barbadoes have their shores covered with porcelains, chamæ, and buccina: and at St. Domingo there are almost all the same species of shells that we have from the East Indies; only they are not quite so beautiful. The pearl oyster is found also, but smaller than in the Persian Gulf. At Martinico there are in general the same shells as at St. Domingo. About Canada are found the violet chamæ; and the lakes of that country abound with mussels of very elegant pale blue and pale red colors. On the Great Bank of Newfoundland the principal kind are mussels of considerable beauty. About Cartagena there are many mother-of-pearl shells. The island of Magellan furnishes us with a very remarkable species of mussels, and several very elegant species of limpets, particularly the pyramidal.

The shores of *Asia* furnish us with the pearl oysters and scallops in great perfection. About Amboyna are found the most beautiful specimens of the cabbage shell, the arrosoir, the ducal mantle, and the coral oysters, or echinatus oysters: also a great variety of extremely beautiful mussels, tellinæ, and volutæ; some fine buccinums, and the shell called the Ethiopian crown, in its greatest perfection. The dolia, the murices, and the cassandræ, are also found on these

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coasts in great beauty. Many elegant snails and screw-shells are also brought thence: and the serapion and spider shells. The Maldive and Philippine Islands, Bengal, and the coast of Malabar, abound with the most elegant of all the species of snails, and furnish many other kinds of shells in great abundance and perfection. China abounds in the finest species of porcelain shells, and has also a great variety of beautiful snails. Japan furnishes us with all the thicker and larger bivalves; and the isle of Cyprus is famous above all other parts of the world for the beauty and variety of the pateila or limpet.

Our own British coasts produce also very pretty shells. About Plymouth are found oysters, mussels, and solens, in great abundance: and there, and on most of our other shores, are numbers of the aures marinæ and dentalia, with pectens, which are excellent food; and many elegant species of the chamae and tellinæ are fished up about Scarborough, &c. Ireland affords great numbers of mussels, and some very elegant scallop-shells; and the pholades are frequent on most of our shores. We have also great variety of the buccina and cochlearæ, some volutæ: and, on the Guernsey coast, a peculiarly beautiful snail, called the Guernsey snail.

The ports of Marseilles, Toulon, and Antibes, in France, are full of pinnae marinæ, mussels, tellinæ, and chamae. The coasts of Bretagne afford great numbers of the conchæ anatiferæ and poussepieds; they are found on old rotten boards, on sea substances, and among clusters of sponges. The other ports of France, as Rochelle, Dunkirk, Brest, St. Maloes, and others, furnish oysters excellent for the table, but of the common kind, and of no beauty in their shells; great numbers of mussels are also found there; and the common tellinæ, the onion-peel oysters, the solens, and conchæ anatiferæ, are also frequent there. At Granville there are found very beautiful pectens, and some of the cordiform or heart-shells.

The *fresh water* shells are found much more frequently, and in much greater plenty than the sea kinds; there is scarcely a pond, a ditch, or a river of fresh water in any part of the world in which there are not found vast numbers of these shells with the fish living in them. All these shells are small, and they are of very little beauty, being usually of a plain grayish or brownish color. Our ditches afford us chamae, buccina, neritæ, and some patellæ; but the Nile and some other rivers furnished the ancients with a species of tellina which was large and eatable, and so much superior to the common sea tellina in flavor, that it was commonly named tellina regia, i. e. the royal tellina. We have a small species of buccinum common in our fresh waters, which is very elegant, and always has its operculum in the manner of the larger buccina; a small kind of mussel is also very common, which is so extremely thin and tender that it can hardly be handled without breaking. The large fresh water mussel, called the horse mussel, is well known: and the size sufficiently distinguishes it from all other fresh water shells.

The Mediterranean and Northern ocean contain a great variety of shells, and many of very

remarkable elegance and beauty. The gulf of Tarrentum affords great variety of purpure porcelains, nautili, and elegant oysters; the coasts of Naples and Sardinia afford the same, and with them a vast number of the solens of all the known species. Sicily is famous for a very elegant kind of oyster which is white all over; pinnae marinæ and porcelains are also found in great plenty there, with tellinæ and chamae of many species. Corsica is famous, beyond all other places, for vast quantities of the pinnae marinæ; and many other very beautiful shells are found there. (Lister. Hist. Conchyl.) About Syracuse are found the gondola shell, the alated murex, and a great variety of elegant snails, with some of the dolia and neritæ. The Adriatic Sea is less furnished with shells than the rest of these seas. Mussels and oysters of several species are however found there, and some of the cordiform or heart-shells: there are also some tellinæ. About Ancona there are vast numbers of the pholades buried in stone (see Pholæs); and the aures marinæ are particularly frequent about Puzzoli.—(Bouani, Recreat. Ment. et Ocul).

The coasts of Spain and Portugal afford much the same species of shells with the East Indies, but they are greatly inferior in beauty. There are, according to Tavernier and others, some rivers in Bavaria in which there are found pearls of a fine water. About Cadiz there are very large pinnae marinæ, and some fine buccina. The isles of Majorca and Minorca afford a great variety of extremely elegant shells. The pinnae marinæ are also very numerous there, and their silk is wrought into gloves, stockings, and other things. The Baltic affords many beautiful species, particularly an orange-colored pecten, or scallop shell, which is not found in any other part of the world.

In collecting shells it is most advisable, whenever it can be done, to get those which have in them the living animals; because we shall thus obtain the natural history of the animals, and the shells themselves in their natural beauty, and the full glow of their colors. Shells should be also procured from the deeper parts of their resorts, and immediately after storms on the sea beaches and shores; because, by being much exposed to the sun, their colors fade, and they are liable to other accidents that injure them. To kill the fish that inhabits them M. Da Costa advises to give them a quick dip in boiling water, and, when they are cooled, to lay them in cold water till they are cleaned; and in this operation they should not be touched with aquafortis, or any other acid, nor exposed to the heat of the fire and sun. The art of polishing shells arrived but lately at its present state of perfection. Among the immense variety of shells, some are taken up out of the sea, or found on its shores, in all their perfection and beauty; with a natural polish superior to any thing that art could give. In others, where the beauties are latent, art is to be called in; and the outer veil being taken off all the internal beauties appear. Among the shells found naturally polished are the porcelains, or cowries; the cassanders; the dolia, or conchæ globosæ, or tuns; some buccina, the volutes, and the cylinders, or olives

or as they are generally, though improperly, called, the *rhombi*. But there are several other genera, in which most of the species are taken up naturally rough and covered with a coarse outer skin. The naturalists insist upon having all their shells in their native and genuine appearance as they are found when living at sea; but the ladies will have all such polished. But both kinds of collectors ought to have the same shells in different specimens both rough and polished: the naturalist would thus, besides knowing the outside of the shell, be better acquainted with its internal characters, and the lady would have a pleasure in comparing the beauties of the shell, in its wrought state, to its natural coarse appearance. When a shell is to be polished, first examine whether it have naturally a smooth surface, or be covered with tubercles or prominences. A shell which has a smooth surface, and a natural dull polish, need only be rubbed with the hand, or with a piece of chamoy leather, with some tripoli, or fine rotten-stone, and it will become of a perfectly bright and fine polish. Emery is not to be used, because it wears away too much of the shell. This operation requires an experienced person, who knows where he is to stop; for in many of these shells the lines are only on the surface, and their beauty is easily defaced. A shell that is rough, foul, and crusty, or covered with a tartareous coat, must be left a whole day steeping in hot water; when it has imbibed a large quantity of this, it is to be rubbed with rough emery on a stick, or with the blade of a knife, to get off the coat. After this, it may be dipped in diluted aquafortis, spirit of salt, or any other acid: and, after remaining a few moments in it, be again plunged into common water. After this it is to be well rubbed with linen cloths, impregnated with common soap; and, when thus made perfectly clean, it is to be polished with the fine emery and a hair-brush. If after this the shell, when dry, appears not to have so good a polish as was desired, it must be rubbed over with a solution of gum arabic, which will add greatly to its gloss. When a shell is covered with a thick and fatty epidermis, as is the case with several of the mussels and tellinæ; in this case aquafortis will do no service, as it will not touch the skin; then a rough brush and coarse emery are to be used; and, if this does not succeed, seal-skin, or, as the workmen call it, fish skin and pumice-stone are to be employed. When a shell has a thick crust, which will not give way to any of these means, the best way is to plunge it into strong aquafortis, till the stubborn crust is wholly eroded. The limpets, *auris marina*, the helmet-shells, and several other species of this kind, must have this sort of management: a long piece of wax must be provided, and one end of it made perfectly to cover the whole mouth of the shell; the other end will then serve as a handle, and, the mouth being stopped by the wax, the liquor cannot get in to the inside to spoil it; then there must be placed on a table a vessel full of aquafortis, and another full of common water. The shell is to be plunged into the aquafortis; and, after remaining a few minutes in it, is to be taken out, and plunged into the common water.

The progress the aquafortis makes in eroding the surface is thus to be carefully observed; the point of the shell, and any other tender parts, are to be covered with wax, to prevent the aquafortis from eating them away; and, if there be any worm holes, they also may be stopped up with wax, otherwise the aquafortis would soon eat through in those places. When the coat is sufficiently eaten away, the shell is to be wrought carefully with fine emery and a brush; and, when it is thus polished as high as can be, it must be wiped clean, and rubbed over with gum water or the white of an egg. In this sort of work the operator must take care lest the aquafortis burn his fingers, or eat off the skin and the nails. These are the methods to be used with shells which require but a moderate quantity of the surface to be taken off; but there are others which require to have a larger quantity taken off, and to be uncovered deeper; this is called entirely scaling a shell. This is done by means of a horizontal wheel of lead or tin, impregnated with rough emery; and the shell is wrought down in the same manner in which stones are wrought by the lapidary, whom it will be proper to consult on such occasions. After the shell is cut down to a proper degree, it is to be polished with fine emery, tripoli, or rotten-stone, with a wooden wheel turned by the same machine as the leaden one. When a shell is full of tubercles, or protuberances, which must be preserved, it is then impossible to use the wheel; and, if the common way of dipping into aquafortis be attempted, the tubercles, being harder than the rest of the shell, will be eaten through before the rest is sufficiently scaled, and the shell will be spoiled. In this case a camel's hair pencil must be dipped in aquafortis; and with this the intermediate parts of the shell must be wetted, leaving the protuberances dry: this is to be often repeated; and the shell always to be plunged into water to stop the erosion of the acid, which would otherwise eat too deep. It is then to be polished with emery of the finest kind, or with tripoli, or the common polishing-stone used by the goldsmiths. The Dutch are very fond of shells, and are very nice in working them, but use the most violent methods, so as often to destroy all their beauty. They file them down on all sides, and often take them to the wheel, which destroys the very characters of the species. They even add some lines and colors with a pencil, afterwards covering them with varnish, so that they seem the natural lineations of the shell; the Dutch cabinets are by these means made very beautiful, but rendered totally useless as instructors in natural history. Connoisseurs are often imposed upon by these tricks to purchase them for new species.

Mother-of-pearl shells are 'composed of alternate layers of carbonate of lime and a thin membranaceous substance, which resembles exactly coagulated albumen in its properties. This membrane still retains the figure of the shell, after all the carbonate of lime has been separated by acid. Mother-of-pearl contains sixty-six parts of lime, and thirty-four membrane.'

Various are the means used by artists to brighten the colors, and add to the beauty of

shells : and the changes produced by polishing in this manner are so great that the shell can scarcely be known afterwards to be the same it was ; and hence we hear of new shells in the cabinets of collectors, which have no real existence as separate species, but are disguised by polishing. To caution the reader against impostures of this kind, it is proper to mention the most remarkable species thus usually altered. The onyx shell or volute, called the purple or violet tip, which in its natural state is of a simple pale brown, when wrought slightly, or polished with just the superficies taken off, is of a fine bright yellow ; and, when eaten away deeper, it appears of a fine milk-white, with the lower part bluish ; it is in this state that it is called the onyx-shell ; and it is preserved in many cabinets in its rough state, and in its yellow appearance, as different species of shells. The violet shell is a species of porcelain or common cowry, which does not appear in that elegance till it has been polished ; and the auris marina appears in different forms, as it is more or less deeply wrought. In its rough state it is dusky and coarse, of a pale brown on the outside, and pearly within ; when it is eaten down, a little way below the surface, it shows variegations of black and green : and, when farther eroded, it appears of a fine pearly hue within and without. The nautilus, when polished down, appears all over of a fine pearly color ; but, when it is eaten away but to a small depth, it appears of a fine yellowish color, with dusky hairs. The burgau, when entirely cleared of its coat, is of the most beautiful pearl color ; but, when only slightly eroded, it appears of a variegated mixture of green and red, whence it has been called the paroquet shell. The common helmet shell, when wrought, is of the color of the finest agate ; and the mussels, in general, though very plain shells in their common appearance, become very beautiful when polished, and show large veins of the most elegant colors. The Persian shell, in its natural state, is all over white, and covered with tubercles ; but when ground down on a wheel, and polished, it appears of a gray color, with spots and veins of a very bright and highly polished white. The limpets, in general, become very different when polished, most of them showing very elegant colors ; among these the tortoise shell limpet is the principal ; it does not appear at all of that color or transparency till it has been wrought. That elegant species of shell called the junquilla, which has deceived so many judges of these things into an opinion of its being a new species, is only a white chama with a reticulated surface ; but, when this is polished, it loses at once its reticular work and its color, and becomes perfectly smooth, and of a fine bright yellow. The violet colored chama of New England, when worked down and polished, is of a fine milk-white, with a great number of blue veins, disposed like the variegations in agates. The asses ear shell, when polished after working it down with the file, becomes extremely glossy, and obtains a fine rose color all about the mouth. These are some of the most frequent important changes wrought on shells by polishing ; and many of the very greatest beauties of this part of the

creation must have been for ever hid, but for this method of searching deep in the substance of the shell for them.

*Marine shells* may be divided, according to Mr. Hatchett, into two kinds ; those that have a porcellanous aspect with an enamelled surface, and when broken are often in a slight degree of a fibrous texture ; and those that have generally, if not always, a strong epidermis, under which is the shell, principally or entirely composed of the substance called nacre, or mother-of-pearl. The porcellanous shells appear to consist of carbonate of lime, cemented by a very small portion of animal gluten. This animal gluten is more abundant in some, however, as in the *patellæ*. The mother-of-pearl shells are composed of the same substances. They differ, however, in their structure, which is lamellar, the gluten forming their membranes, regularly alternating with strata of carbonate of lime. In these two the gluten is much more abundant.

Mr. Hatchett made a few experiments on land shells also, which did not exhibit any differences. But the shells of the crustaceous animals he found to contain more or less phosphate of lime, though not equal in quantity to the carbonate, and hence approaching to the nature of bone. Linnaeus, therefore, he observes, was right in considering the covering of the echini as crustaceous, for it contains phosphate of lime. In the covering of some of the species of asterias, too, a little phosphate of lime occurs ; but in that of others there is none.

*Fossil and live shells of the same species differ, according to locality, distance, &c.—*It has been remarked that the same fossil shells, found in places at a distance from each other, always exhibit some differences in their form, the deepness of their grooves, the degree of projection of their spines, &c. Mr. Basterodt affirms the same to be the case with living species, as he found that they do not exhibit the same characters in places separated at considerable distances from each other, or even in near localities, when the heat, humidity, nourishment, &c., are different. Hitherto but little attention has been paid to those local differences ; hence it has happened that new species have been proposed, which were only varieties of known species. This fact is of great importance in a geognostical point of view.

The above writer seems also to have established that the same fossil species of shells are associated with different suites of species in different localities. The same species of fossil shell may occur in deposits situated at considerable distances from each other, but in these different localities the species are not grouped with the same set of species. It is also a matter of observation that fossil shells of the same species are more and more numerous in different basins of the same era of formation, the nearer these basins are to each other. In illustration of this latter fact, Basterodt informs us, that, of the 270 species which he found in the vicinity of Bourdeaux, but eighty-two occur in the depots of Italy, fifty-two around Paris, twenty-one in the tertiary basins of England, and only seventeen in the basin of Vienna in Austria.

**SHELL**, the outward part of a tent or marquée.

**SHELL**, a short jacket without arms, which was worn by light dragoons, and in some instances by the infantry, before the new regulations took place respecting the clothing of the British army. At the commencement of the late wars, some militia colonels derived no inconsiderable emoluments from this mode of dress.

**SHELL, LOADED**, an invention for preserving the lives of people in danger of shipwreck.

**SHELL OF A SWORD** (*plaqué d'épée*, Fr.), a particular part of a sword, which serves as a shield to the hand when it grasps the hilt. The regulation sword, which is directed to be worn in a cross belt, has its shell so constructed that one side can fall down, by which means the hilt hangs more conveniently.

*A spring-shell of a sword* (*plaqué d'épée à ressort*, Fr.), a shell which by means of a spring can lie flat against the hip, when the sword is worn in a cross-belt. The proper word is coquille, not plaque.

**SHELLS**, in gunnery, are hollow iron balls to throw out of mortars or howitzers, with a fuse hole of about an inch diameter, to load them with powder, and to receive the fuse. The bottom, or part opposite to the fuse, is made thicker than the rest, that the fuse may fall uppermost. But in small elevations this does not always happen, nor indeed is it necessary; for, let the shell fall as it will, the fuse sets fire to the powder within, which bursts the shell, and causes great devastation. The shells had much better be of an equal thickness, for then they burst into more pieces. Mortars are thought to have been full as ancient as cannon. They were employed in the wars of Italy, to throw balls of red hot iron, stones, &c., long before the invention of shells. These last are thought to be of German invention, and the use of them in war to have been taught by the following accident:—A citizen of Venlo, at a festival celebrated in honor of the duke of Cleves, threw a number of shells, one of which fell on a house and set fire to it, by which misfortune the greatest part of the town was reduced to ashes. The first account of shells used for military purposes is in 1435, when Naples was besieged by Charles VIII. Shells were thrown out of mortars at the siege of Wachten-donk, in Guelderland, in 1588, by the earl of Mansfield. Mr. Malter, an English engineer, first taught the French the art of throwing shells, which they practised at the siege of Motte, in 1634. The method of throwing red hot balls out of mortars was first practised at the siege of Stralsund, in 1675, by the elector of Brandenburg; though some say in 1653, at the seige of Bremen. See MORTAR.

*To find the weight of a shell.* Rule.—Double the difference of the cubes of the diameters of the shell and hollow sphere, and seven times the result gives the weight in pounds, cutting off the two right hand figures of whole numbers. Example.—Let the diameter of the shell be 13 inches, and that of the hollow sphere 9·5. Then the cube of 13 is 2197, and that of 9·5, is 857·357; the difference is 1339·625; its double is 2679·25, which, multiplied by 7, gives 18754·625,

and cutting off two places, in whole numbers, the result is 187 lbs., or 1 cwt. 2 qrs. 21 lbs., the weight of the shell.

**SHELLS, SHRAPNEL, or SPHERICAL CASE-SHOT**, are shells of a peculiar construction, invented by colonel Shrapnel of the royal artillery. They were used with peculiar effect against the French army, which Sir Arthur Wellesley, now duke of Wellington, fought on the 21st of August, 1808; and also at the battle of Waterloo in 1815. The following explanation of the effects and advantages that might be derived by firing this species of shot is extracted from a book lately published:—

1. The whole charge takes effect on the enemy at any distance. By the present mode of firing the greatest part of the charge disperses as soon as it leaves the muzzle of the gun, and cannot be directed.

2. Grape, or case shot, may be fired with an effect equally close and collected, to any distance within the range of the piece; and the artillery need not advance within musket shot of the enemy to make use of this kind of fire with its full effect, and are not so subject to have their guns charged either by cavalry or infantry.

3. It requires less precision and exactness to point a piece of ordnance charged with spherical case shot than with round shot, because case shot is a wide and dispersed fire, and the difficulty in elevation consequently less.

4. Its comparative destruction with that of round shot will be, generally, as the number of shot within the shells to one; that is to say, a three pounder, twenty-two to one in its favor; a six pounder, fifty to one, &c., in which calculation is not enumerated any effect from the splinters of the shell.

5. Small balls cannot be projected to very considerable distances, unless enclosed in heavy spherical cases, which, from their form and weight, are not much influenced by the resistance of the air, or diverted from their direction.

6. The explosion of the shell makes no change in the direction of the shot within it: they consequently complete the shell's track, or curve, which has sometimes been observed to be 400 yards.

7. From the unevenness of the ground, such as hillocks, banks, fallow-fields, &c., all shot which graze most commonly lodge; whereas, by using this shell, the whole charge will be carried over these irregularities, and reach the object with its full contents of balls.

N. B. Firing this kind of shells from guns is managed with more facility than the ordinary howitzer practice both as to the length of fuse, as well as the elevation required, and may be carried on in the field precisely the same as firing round shot.

*Mode of examining the different natures of lieutenant colonel Shrapnel's shells in the royal laboratory.*—1. The shells are to be well examined with a pick hammer of a proper weight to the diameter of each nature, to find they are not damaged by sand holes, or other flaws.

2. They are to be well scraped inside, with scrapers that will get under the dip of the fuse hole, so that all the bore, sand, or gravel may be

cleaned out, which is done by rolling and shaking the shell with the fuse-hole downwards. It may be taken out of large shells with a proper ladle, that will go into the fuse-hole.

3. They are to be proved with a strong bellows and water as usual; the shot being placed under in a tub or bucket, introduce the nose of the bellows into the fuse, and by blowing them the water will bubble if the shell be porous.

4. They are to be examined, by the new caliper instruments, round the side and at the bottom, to ascertain their thickness and concentricity.

5. They are to be examined by a circular gauge, and appropriated to the respective ordnance they are found to answer. If any are too high by 0·3 of an inch, or too low by 0·3 of an inch, they are to be rejected.

6. When each shell is ascertained to be perfectly dry inside, it is to be placed with its fuse-hole up, and the nose of a strong bellows, forming an angle downwards, being introduced into it, a few blasts being given, will blow the remaining particles of dust out of the shell.

7. The shells are to be classed, by their fuse-holes, into different numbers, viz. 1, 2, 3, and 4; those of an equal size to be packed in boxes by themselves.

8. A file to be used occasionally to try if the metal is soft, instead of breaking the shell.

9. Each shell to be sounded, by striking it gently, as the ringing tone will be lost should there be an imperceptible crack in it.

N. B. In the examination of spherical case shot shells, the thick side of the shell need not be taken into consideration, but the thinnest part only; for when the thinnest part is too thin, by the rule given, the thickest part must be too thick, which needs no examination to discover.

Supposing an eighteen-pounder shell ought to be five inches thick in every part, subtract the non-concentricity allowed of 0·83 from it, and there remains 4·17 inches, for the thinnest part of an eighteen-pounder shell which can be received.

*Method of making fuses of colonel Shrapnel's construction.*—The fuses, after being turned so as to fit the fuse-holes, are bored, and a deep thread grooved inside, to hold the composition firm; and, instead of being turned with cups, they are hollowed conical, and roughed with a tool that cuts under, the better to receive the priming. After they are driven, with fuse composition, one and one-half inch, the yard sawed across the top, about one-fifth of an inch down, so as not to touch the composition, and divided into five equal parts, of two-tenths of an inch each; after which a bit of quick match is placed across, and drawn tight in the same grooves; they are then primed, with mealed powder and spirits of wine, capped and packed for service.

TABLE OF THE DIMENSIONS AND WEIGHT OF SHELLS FOR MORTARS AND HOWITZERS.

Species.	Weight.	Diameter.	Powder contained in Shells.	Powder for bursting.	Diameter of Fuse holes.		Thickness of Metal.
					Outside	Inside.	
13-Inch.	Cwt. qrs. lbs. oz.	Inch.	lbs. oz.	lbs. oz.	Inch.	Inch.	Inch.
10 do.	1 3 2	12 $\frac{3}{4}$	10 4	6 12	1·837	1·696	2·05
8 do.	— 3 9	9 $\frac{3}{4}$	4 5	2 10	1·57	1·45	1·575
5 $\frac{1}{2}$ do.	— 1 11 8	7 $\frac{3}{4}$	2 12	1 14	1·219	1·127	1·2
4 $\frac{1}{2}$ do.	— — 15 4	5 $\frac{1}{4}$	1 —	— 12	0·894	0·826	0·822
II. Gren.	— 8	4 $\frac{1}{2}$	— 7	— 5	0·832	0·769	0·653
	3 11	3·49					
	1 13	2·77			1 $\frac{1}{2}$		

DIMENSIONS OF SHELLS FOR GUNS AND CARRONADES made with an equal thickness of metal.

	Species.	42-pr.	32.	24.	18.	12.
Guns.	Diameter of the Shell	Inch.	Inch.	Inch.	Inch.	Inch.
	Exterior	6·684	6·105	5·547	5·05	4·4
	Interior	4·404	4·005	3·767	3·4	2·8
	Thickness of Metal	1·14	1·05	0·89	0·82	0·8
Carro- nades.	Diameter of the Shell	0·894	0·894	0·893	0·832	0·832
	Exterior	0·826	0·826	0·826	0·76	0·769
	Fuse-hole	0·826	0·826	0·826	0·76	0·769
	Powder for bursting . .	14 oz.	11 oz.	12 oz.	9 oz.	5 $\frac{1}{2}$ oz.
	Diameter of the Shell	6·64	6·05	5·48	4·935	4·295
	Exterior	4·36	3·95	3·48	3·235	2·695
	Interior	4·36	3·95	3·48	3·235	2·695
	Thickness of Metal . .	1·14	1·35	1·	0·85	0·98
Shell's weight . . . lbs.			0·22		0·12	
Contains powder . . oz.			0·12 $\frac{1}{2}$		0·09	
Powder for bursting oz.			0·10		0·07	

The following snells may also be fired from guns:—

Hand-grenades,	from 6-pounds.
4 <i>f</i> -shells	. . 12 . .
5 <i>f</i> -shells	. . 24 . .
8-inch	. . 68-pr. carronades.

Shells may likewise be thrown from guns to short distances, in cases of necessity, though the bore be not of a diameter sufficient to admit the shell. For this purpose the gun may be elevated to any degree that will retain the shell upon its muzzle, which may be assisted by a small line going from the lugs of the shell round the neck of the gun. To produce a greater effect, the space between the shell and the charge may be filled with wads or other substances.

To SHELL, among horses, to have the teeth completely bare and uncovered, which happens about the fifteenth or sixteenth year.

SHELLS, MESSAGE, are nothing more than howitz shells, in the inside of which a letter or other paper is put; the fuse hole is stopped up with wood or cork, and the shells are fired out of a royal or howitz, either into a garrison or camp. It is supposed that the person to whom the letter is sent knows the time, and accordingly appoints a guard to look out for its arrival.

SHELL-FISH are in general oviparous, very few instances having been found of such as are viviparous. Among the oviparous kinds anatomists have found that some species are of different sexes in the different individuals of the same species; but others are hermaphrodites, every one being in itself both male and female. In both cases their increase is very numerous, and scarcely inferior to that of plants, or of the most fruitful of the insect class. The eggs are very small, and are hung together in a sort of clusters by means of a glutinous humor which is always placed about them, and is of the nature of the jelly of frog's spawn. By means of this they are not only kept together in the parcel, but the whole cluster is fastened to the rocks, shells, or other solid substances; and thus they are preserved from being driven on shore by the waves, and left where they cannot succeed. See TESTACEA.

SHELL-GALL-INSECT, a gall-insect, somewhat resembling those which are called the boat-fashioned ones, but differing in this, that as the two ends of that species are not very different in form, in this kind one of the ends is sharp and pointed in comparison with the other. It has its name of shell-insect from the resemblance it has to a mussel shell; as it is, in its whole form, not unlike one of the two shells in which the common sea-mussel is enclosed, but the pointed end of this insect is much more extended in length than the smaller end of this shell.

This species is extremely small, and may be easily mistaken for the minute case out of which some small insect has escaped; or, in an other state, for the nest in which some small insect has deposited its eggs; but, if the assistance of the microscope be called in, they will easily be discovered to be true gall-insects, even as soon as they are hatched from their eggs. This species, at its full growth, is so small that it requires good eyes to discover it: it is brown, very

smooth, and polished on the surface, and much of the color of the bark of some trees; it has usually an edge of a cottony matter, visible where its sides touch the tree, and its eggs are always deposited on a fine cottony bed; the young ones are white, flat, and have two small horns and six legs; in this state they are known to be of the gall-insect class, not by their likeness to their parent, but to the young gall-insects of other species. They march about very briskly for some time after they are hatched, and after that fix themselves, and then begin to grow, and by degrees alter their form, till they at length are of the same shape with their parent.—Reaumur, Hist. Ins. tom iv. p. 69, 70.

SHELL-TOOTHED HORSE is one that from four years, to old age, naturally bears a mark in all his fore-teeth, and there still keeps that hollow place with a black mark, which we call the eye of a bean, insomuch, that at twelve or fifteen he appears with the mark of a horse that is not yet six.

SHELIA, an ancient town of Africa, in Morocco; containing several Moorish tombs, which are highly venerated. The town is considered as an asylum so sacred that none but Mahometans are permitted to enter it. It is supposed to have been anciently the metropolis of the Carthaginian colonies on the west coast of Africa.

SHELIF, the most considerable river of Algiers, the Chinalaph of the ancient geography. It rises among the mountains of Atlas, in a place called the Seventy Fountains; flows north during the first part of its course, then west, and then nearly parallel to the sea. Its whole length is about 200 miles. In its early course it forms the lake of Titterie.

SHELTER, *n.s., v. a. & v. n.* Skinner defines it from shell; Davis from Sax. *reylb*, a shield. There is also a Goth. *skul*, and Isl. *skildu*. Protection; cover from outward violence or inclemency; a defender or protector; state of being covered: to cover in this way; defend: to take or give protection of this kind: shelterless is, defenceless without home or refuge.

Thou hast been a shelter for me, and a strong tower from the enemy. *Psalm lxi. 3.*

We hear this fearful tempest sing,

Yet seek no shelter to avoid the storm.

*Shakspeare, Richard II.*

They sheltered themselves under a rock. *Abbot.*

Low at his foot a spacious plain is placed,  
Between the mountain and the stream embraced;  
Which shade and shelter from the hill derives,  
While the kind river wealth and beauty gives.

*Denham.*

They wish the mountains now might be again  
Thrown on them, as a shelter from his ire. *Milton.*

We besought the deep to shelter us. *Id.*

Heroes of old, when wounded, shelter sought;  
But he, who meets all dangers with disdain,  
Even in their face his ship to anchor brought,  
And steeple high stood propt upon the main.

*Dryden.*

Those ruins sheltered once his sacred head,  
When he from Worcester's fatal battle fled,  
Watched by the genius of this royal place. *Id.*

Now sad and shelterless, perhaps, she lies,  
Where piercing winds blow sharp.

*Rowe's Jane Shore*

In vain I strove to check my growing flame,  
Or shelter passion under friendship's name ;  
You saw my heart. *Prior.*

Comfort thyself with such thoughts, chiefly when  
all earthly comforts fail thee ; then do thou particu-  
larly retreat to those considerations, and shelter thy-  
self under them. *Atterbury.*

The healing plant shall aid,  
From storms a shelter, and from heat a shade. *Pope.*

Then seeks the farthest ooze, the sheltering weed,  
The caverned bank, his old secure abode. *Thomson.*

Who into shelter takes their tender bloom,  
And forms their minds to fly from ills to come. *Young.*

November hirples o'er the lea,  
Chill, on thy lovely form ;  
And gane, alas ! the sheltering tree,  
Should shield thee frae a storm. *Burns.*

At a thoughtless age, allured  
By every gilded folly, we renounced  
His sheltering side, and wilfully forewent  
That converse, which we now in vain regret. *Cowper.*

SHEM, or SEM, the second son of Noah, born about A. M. 1558. His filial piety and modesty in endeavouring, along with his elder brother Japhet, to conceal the effects of the only act of folly which the excellent old patriarch had fallen into, and which their brother Ham, with probably his son Canaan, had made a subject of ridicule, are recorded in Genesis ix. 23, together with the remarkable benediction pronounced upon them in consequence, and the dreadful curse upon Ham's posterity, the effects of which continue even to the present period. The posterity of Shem by his five sons Elam, Ashur, Arphaxad, Lud, and Aram, peopled most of the south part of Asia and the adjacent islands, and gave rise to the kingdoms of Persia, Assyria, Phoenicia, Lydia, Syria, &c. See PHYSIOLOGY. In that branch of it from which the Hebrews descended, from Heber, the grandson of Arphaxad, the true church, and the knowledge of the true God were continued for above 2000 years, till the coming of Jesus Christ, by the promulgation of whose glorious gospel among the Gentiles the prophecy respecting the posterity of Japhet was completely fulfilled. Shem lived to the age of 600 years, and died about A. A. C. 2467.

SHEMAIAH, an inspired prophet of Judah, in the reign of Rehoboam, who prevented a civil war between Israel and Judah, and prevailed on Rehoboam's new raised army of 180,000 warriors to disband, by assuring them, that the division of the kingdom which had just taken place was ordained by the Almighty. See 1 Kings xii. 21—24. He delivered other two messages to the king and the people. Shemaiah was also an author, and wrote the history of Rehoboam ; which is quoted in 2 Chron. xii. 5, 7, and 15.

SHEMINITH, in Hebrew antiquity, a musical instrument of eight strings. It is mentioned in the title of Psalms vi. and xii.

SHENAN, a drug used in the east for dyeing leather red. It is the eastern jointed kali, a species of salicornia, which grows plentifully in Turkey, Syria, Africa, &c. The salicornia perennis has been used for it, but not always with success.

SHENANDOAH, a county of Virginia, United States, bounded north by Frederick county south-east by Culpeper and Madison counties, south-west by Rockingham county, and west by Hardy county. Chief town Woodstock.

SHENANDOAH, a river of Virginia, United States, which rises in Augusta county, and, after a course of about 200 miles, joins the Potomac, in lat. 38° 4' N., just before the latter bursts through the Blue Ridge. It is composed of the South, Middle, and North rivers, and is navigable for boats 100 miles.

SHEND, v. a. *Preter.* and *part. pass.* shent. Sax. *seentan*; Belg. *schendan*. To ruin; spoil; mischief. Obsolete.

Provide for thy wife, or else look to be shent,  
Good milchcow for winter, another for Lent. *Tusser.*

Shepherds, should it not *yshent*  
Your roundels fresh, to hear a doleful verse  
Of Rosalind, that Colin made ? *Spenser.*  
She passed the rest as Cynthia doth *shend*

The lesser stars. *Id.*

Sore bruised with the fall, he slow uprose,  
And, all enraged, thus him loudly *shent* :  
Disleal knight ! whose coward courage chose  
To wrek itself on beast. *Faerie Queene.*

My tongue and soul in this be hypocrites ;  
How in my words soever she be *shent*,  
To give them seals never, my soul, consent. *Shakespeare. Hamlet.*

Such a dream I had of dire portent,  
That much I fear my body will be *shent* ;  
It bodes I shall have wars. *Dryden.*

SHENSTONE (William), an admired English poet, the eldest son of a country gentleman, who farmed his own estate in Shropshire, was born in November 1714. He learned to read of an old dame, whom his poem of the School Mistress has immortalised ; and soon received such delight from books that he always expected, when any of the family went to market, a new book should be brought him. As he grew older he went to the grammar school in Itales Owen, and afterwards to Mr. Crompton, an eminent schoolmaster at Solihul, where he distinguished himself by his quick progress. In his tenth year (June 1724) he was deprived of his father ; and soon after (August 1726) of his grandfather ; and was with his brother, who died afterwards unmarried, left to the care of his grandmother, who managed the estate. From school he was sent, in 1732, to Pembroke College in Oxford, a society which, for half a century, has been eminent for English poetry and elegant literature. Here he continued his name ten years, though he took no degree. After the fourth year he put on the civilian's gown, but without any intention to engage in the profession. About the time he went to Oxford the death of his grandmother devolved his affairs to the care of the Rev. Mr. Dolman, of Brome, in Staffordshire, whom he always mentioned with gratitude. At Oxford he, in 1737, published a small Miscellany, without his name. He published, in 1740, his *Judgment of Hercules*, addressed to Mr. Lyttleton, whose interest he supported with great warmth at an election ; this was two years afterwards followed by the School Mistress. Mr. Dolman died in 1745, and the care of his fortune now fell upon himself. He

then took the whole estate into his own hands, and rather improved its beauty than increased its produce. Now began his delight in rural pleasures, and his passion for rural elegance; but in time his expenses occasioned clamors that overpowered the lamb's bleat, and the linnet's song, and his groves were haunted by beings very different from fawns and fairies. He spent his estate in adorning it, and his death was probably hastened by his anxieties. He was a lamp that spent its oil in blazing. He died at the Leasows of a putrid fever, February 11th, 1763; and was buried by the side of his brother, in the church-yard of Hales-Owen. In his private opinions our author adhered to no particular sect, and hated all religious disputes. Tenderness, in every sense of the word, was his peculiar characteristic; and his friends, domestics, and poor neighbours, daily experienced the effects of his benevolence. This virtue he carried to an excess that seemed to border upon weakness; yet if any of his friends treated him ungenerously he was not easily reconciled. On such occasions he used to say, 'I never will be a revengeful enemy; but it is not in my nature to be half a friend.' He was no economist; for the generosity of his temper prevented his paying a proper regard to the use of money; he exceeded, therefore, the bounds of his parental fortune. But, if we consider the perfect paradise into which he had converted his estate, the hospitality with which he lived, his charities to the indigent, and all out of an estate that did not exceed £300 a year, one should rather wonder that he left any thing behind him than blame his want of economy; he yet left more than sufficient to pay all his debts; and by his will appropriated his whole estate to that purpose. Though he had a high opinion of many of the fair sex, he forbore to marry. A passion he entertained in his youth was with difficulty surmounted. The lady was the subject of that admirable pastoral, in four parts, which has been so universally and so justly admired, and which, one would have thought, must have softened the proudest and most obdurate heart. Another of his poems does no less honor to his feelings and his virtuous sentiments. It displays, in the most affecting terms, the grief and remorse of an ingenuous mind upon the unfortunate issue of a licentious amour, and is founded on fact. This beautiful poem, falling into the hands of a young gentleman at the critical period of a similar connexion, had the effect of preventing a similar fatal catastrophe to that of Henry and Jessy, described by our poet, by determining him to marry the object of his affection. Mr. Shenstone's works have been published by Mr. Dodsley, in 3 vols., 8vo. The first volume contains his poetical works, which are particularly distinguished by an amiable elegance and beautiful simplicity; the second contains his prose works; the third his letters, &c.

**SHEPHERD.** In the General Treatise on Cattle, it is remarked that the method of encouragement adopted in some districts, of allowing the shepherd to possess a small flock, or as many ewes as his means will allow, is probably one of the most powerful. It gives him that steadiness appertaining to property, and is an additional

and strong incentive to the attainment of knowledge in his business. A shepherd should be naturally active, both in body and mind, clear-headed and clear-sighted; such a one, for instance, as can distinguish the individual countenances of a numerous flock, and, running over them with his bodily and mental eye, instantly give the exact number and condition; or perceive, at a glance, a bird's nest in the thickest quickset. Fond of animals and attractive to them, the latter quality of which is well known to inhere in some persons; possessing a musical voice and shrill whistle; hardy, patient, watchful; satisfied with little sleep, and temperate in drink. It is conceived that he ought never to be suffered, if he profess, to practise physic, nor any but the most easy and common operations, a farce that too often ends in a tragedy; for, if of two evils we ought to choose the least, the office of medical practice had better devolve on the master. And for his comfort in the severe weather, in some situations, the moveable wooden house on wheels may be of use. Also that he ought to be clad during winter with substantial woolen next his skin, from his feet upwards, as the best defence against those rheumatic ails, to which he must be necessarily subject; and he should always go provided with the instruments proper to his profession, ready for immediate occasions, namely, scissors, knife, steel, fleam, salve-box, &c. And in folding, as the shepherd will have the flock perpetually under his eye, the first writer thinks, he will be capable of judging with certainty and precision respecting the state of every individual, so that the earliest remedy may be applied to every disorder, and such sheep may be turned out of the fold as are found not to be able to go through their work without manifest injury in their health; and, if a sheep or lamb be seized with a dangerous and incurable malady, to kill and dress it immediately; for it is one part of the business of a shepherd to be so far skilled in the butcher's trade as to be able to slaughter, flea, and dress a sheep on occasion. Farther, that a good shepherd will be careful that his flock be driven late to fold in an evening, and released early in the morning from their confinement, in order that they may enjoy the coolest parts of the day on the food. He will be cautious that they are allowed a sufficient time to graze in the uplands previous to their being driven into the fold, that they may retire to rest with full bellies, by which the quantity of the dung and urine will be considerably augmented. He will likewise be careful in reviewing the hurdles, and providing that these are fixed in the ground, lest by any accident they should be thrown down during the night, and the flock by these means get into mischief, or intermix with other sheep; he will count his sheep regularly every evening when he drives them to the fold, and take a fresh tale in the morning, when he turns them on their feed; he will, previous to dismissing them from the fold, worry them gently round the same, in order to cause them to dung and stale plentifully, that the manure may be left in the field, otherwise the greatest part of the trundles will be dropt on the road, or carried on to the marsh, where, lying

thin, this dressing can do but little service, and where in truth it is not wanted ; he will bestow a particular attention on every individual in his flock, and, for those which show any appearance of being stung by the fly, he will be prepared with a pair of shears to clip away the wool from the part, and, having taken out the maggots, will anoint the place with a mixture of train oil and brinstone ; but, if slightly attacked, he will destroy the maggots by strewing on them powder of white lead ; and if any of the flock should haply break with the scab, a disorder to which folding sheep are continually subject, and which seldom fails to show itself in the spring and fall, he will be provided with a proper remedy to keep it under, and prevent the contagion from spreading. It is thought that one shepherd will be able to look after 300 sheep.

In respect to the necessity of a dog, as an assistant to the shepherd, Mr. Lawrence thinks that it has of late very rationally become a question among the most intelligent sheep-masters : it may be thus settled : there can be no occasion for such aid, nor any necessity for incurring the danger of it, amidst convenient enclosures, or where quiet breeds of sheep are kept, and where it is made an object to render them tame and docile : and if, upon extensive wastes and mountain districts, the service of dogs cannot well be dispensed with, it ought to be made a main point that they be trained early to a kindness for the sheep, and to view them rather as their companions than their prey ; a thing which he knows by experience to be most easy.

The SHEPHERDS, SHEPHERD KINGS, or ROYAL SHEPHERDS, OF EGYPT, in ancient history, is a denomination given to a class of inhabitants of a part of Egypt, concerning whose origin, abode, and migration, both ancient and modern writers have entertained very different opinions. The learned Bryant has published an elaborate Dissertation on this subject. Differing from others concerning the situation of the land of Goshen, he conceives it to have been the Nome called the Arabian, from the Arabian shepherds who had formerly settled in those parts, and held them for many years, and denominated by the LXX, Ρεσοεμ της Αραβιας. The province of Arabia, says this author, was one of the three most remarkable nomes, the other two being those of Bubastus and Heliopolis. These three nomes were contiguous to each other, and towards the summit of Lower Egypt. The nome of Heliopolis, according to his statement, was a Mediterranean district ; and consequently the two provinces, or that of Phacusa (i. e. the Arabian nome), and that of Bubastus, that are always mentioned with the former, were so likewise. Phacusa, mentioned by Strabo only as a village, was the province at whose summit the Nile was first divided, where stood the city of Cercasora. It was called the Arabian nome for the reason above-mentioned, and had for its metropolis Phacusa, and the places situated upon its borders were Babylon, Heliopolis, and Heroum. From Syncellus we learn that Egypt had been in subjection to a three-fold race of kings, who are termed the Auritæ, the Mestræi, and the Egyptian. The Auritæ were the Arabian shepherds

and their kings, who reigned here a considerable time, maintaining themselves by force ; till, after many struggles they were finally expelled by the natives.

According to Manetho, the whole body of this people bore the appellation of Hukos, that is, royal shepherds ; the first syllable in the sacred dialect, signifying a king, and the latter, in the popular language, signifying a shepherd ; and by a composition of these two was formed the word Hukos. These people are said to have been Arabians. Josephus further informs us, from Manetho, that the shepherds maintained themselves in Egypt 511 years. At last the people of Upper Egypt rose in opposition to them, and after some time expelled them the country. However, on their departure, they were afraid of going towards Assyria, and therefore resorted to the country called afterwards Judea, and built Jerusalem. We learn also, from the same authority, that another class of people sojourned in Egypt in the reign of Amenophis ; and that they were treated as slaves by the prince of the country, because they were infected with the leprosy. As their number very much increased, he employed them in the stone quarries that lay on the east side of the Nile, in company with some of the Egyptians. Upon a remonstrance afterwards made to him, he granted them for a retreat the city of Abaris, where the former shepherds had resided, that now lay desolate. The people belonging to each of the two classes now mentioned were esteemed shepherds : the first shepherds were lords and conquerors ; the others were servants, to whom was assigned the city which the former had evacuated. The latter were Israelites, as appears from the name of their leader and lawgiver, Moses ; and the former were Arabians, who are said to have come from the east ; and they are, without doubt, the Auritæ, who founded the city of Auris, or Abaris, which is no other than the city Ur, or Aur, signifying light and fire, of which element the Auritæ must have been worshippers, as all the Arabians were. Their chief god was Alorus (Ai Orus), the god of fire. Accordingly the shepherds were called Auritæ, from the chief object of their worship, and their kings were styled priests of Alorus, or, according to the Greeks, priests of Vulcan. Hence it has been inferred that they came from Babylonia, a country that lay due east from Egypt, which country was the original seat of the genuine Arabians, and the true source whence their religion flowed. The two principal cities of that country were Ur or Aur, and Babylon : in memory of which they built two of the same name in Egypt. Wherever they resided they introduced the Tzeba Schanain, or Zabian worship, together with the worship of fire. Hence we are informed by Herodotus that Vulcan was particularly honored at Heliopolis and Memphis, which places they are said to have built. The true name of these people, says Bryant, who were called by the Greeks and Romans Arabians, was Cushan or Cusæans, the same that they gave to the province where they settled. See CUSH. These strangers, therefore, who settled in Egypt, were no other than the Cusæans ; and they have been styled Arabian shepherds, because all the primi-

tive **Arabians** were Normades or shepherds. These people, becoming lords of the country, undoubtedly chose that part which was the most eligible, and their profession would lead them to the best land for pasture; in respect of which Goshen had not its equal. For it was part of the πεδίον Ατυππτή, the rich champaign of Egypt; so that this circumstance among others would induce one to think that they settled here. This is confirmed by the worship which they settled in these parts; the cities they built; and the names which they bequeathed to the province. According to the Mosaic account, the land of Goshen is repeatedly said to be in the land of Egypt, ‘in the best of the land’; and yet the LXX call it Πεσσημ τῆς Αραβίας, which could be owing to no other reason besides its being the land of Cushan (Goshen), which was interpreted Arabian; for in Arabia it was not situated. Hence it has been concluded that the place where the children of Israel resided in Egypt was the principal Arabian nome, at the extreme and highest part of Lower Egypt, called Cushan. This was the land to which the children of Israel succeeded, after it had been abandoned by its former inhabitants; but it is uncertain at what interval. It appears to have been an unoccupied district; and, as it was the best of the land, there is no accounting for its being unoccupied but by the secession of the Cuseans, whose property it had lately been. Accordingly Manetho expressly affirms that the second shepherds succeeded to the places which had been deserted by the former; and he moreover says, that the city Abaris, which had been built by the first shepherd king, was given to those of their body who were employed in the quarries.

Bryant suggests that the migration of the shepherds was about the time of Serug or Nahor: and this is the time when archbishop Usher supposes it to have happened, who refers it to the year A. M. 1920, according to the Hebrew computation, in the 101st year of the life of Serug, the seventh from Noah, and in the forty-second year of Tebab, eighty-eight years before the birth of Abraham. Bishop Cumberland supposes that the shepherds invaded Egypt A. M. 1937, in the time of the same patriarchs, according to the Hebrew chronology. Our author has alleged several arguments to prove that the Arabian shepherds were distinct from the Israelites, and prior to them. When the Arabians came into Egypt, they are said to have been 240,000 in number, whereas the Israelites were but seventy persons. The former took possession by force; the latter were invited, and had a grant of all that they possessed. The one held the people in slavery; the others were themselves enslaved. The Arabians were driven out of the land; the Israelites were not suffered to depart. See Bryant's Observations and Enquiries, &c. Cont. 1767.

**SHEPPHEY**, an island of Kent, situated at the mouth of the Thames and Medway, separated from the main land of the county by the Swale. It is about twenty-one miles in circumference; the principal places in it are Sheerness, Queenborough, and Eastchurch, Leysdown, and Minister parishes. Its name is supposed to be derived from the number of sheep formerly bred

here. It yields good corn, but is bare of wood, and the water is but indifferent, except at Sheerness, where wells sunk below the bottom of the sea produce excellent water.

**SHEPPERTON**, a parish of Spelthorne hundred, Middlesex, four miles S. S. E. from Staines, on the banks of the Thames, and eighteen from London. A detached part of this parish remains in Surrey, owing to the Thames having altered its course; and that river now passes over the foundation of its ancient church. Near the bridge over the river at Walton are Cowey-stakes, supposed to be the remains of those driven into the river by the Britons, to prevent Caesar's army from fording it; one of these is preserved in the British Museum. It is recorded that the learned Erasmus passed much of his time in the parsonage-house here with his preceptor the rector of the parish.

**SHEPREVE** (John), a learned English orientalist, born at Sugworth, near Abingdon, in Berkshire. He was fellow, and became Greek recorder of Corpus Christi College, Oxford; and in 1538 he was appointed professor of Hebrew in it. He had a very profound knowledge of the Hebrew Scriptures. He published many poems, and died at Agmondesham, in Bucks, in 1542.

**SHEPTON-MALLET**, a market town and parish in Whitestone hundred, Somersetshire, five miles east of Wells, and 11½ from London. The inhabitants are largely employed in knitting stockings, and various other woollen manufactures. The town is situated on several small hills, and the streets irregularly built. There is no curious or remarkable public building except the market cross, erected in 1590 on five arches, and supported by pentagonal columns.

**SHERARD** (William), a learned botanist, was born in 1659, and educated at Merchant Tailor's School, and St. John's College Oxford. Appointed travelling tutor to lord Howland, son of the murdered lord Russel, he formed an acquaintance with all the learned botanists of the continent, and attended three courses of Tournefort's botanical lectures, in 1686, 87, and 88, at Paris. In the summer of 1688 he describes himself as having passed some time in Holland, collecting specimens of plants from the rich gardens of that country, and getting them named by professor Herman himself, who allowed him to peruse the manuscript rudiments of his *Paradise Batavus*, to examine his herbarium, and to compose a *Prodromus* of that work. Sherard afterwards became the editor of Herman's book itself.

In 1700 Mr. Sherard communicated to the Royal Society a paper relative to the making of Chinese or Japan varnishes, which is printed in the Philosophical Transactions, v. 22. The information which it contains was sent by the Jesuits to the grand duke of Tuscany, and probably obtained by our author at Florence. He now became one of the commissioners for sick and wounded seamen at Portsmouth, and about the year 1702, or soon after, was sent out as British consul to Smyrna. Here his botanical taste met with fresh gratification. He visited the seven churches of Asia, copied several ancient inscriptions, and communicated to the Royal

Society an account of the new volcanic island, near Santorini, which rose out of the sea May 12th, 1707. Botany, however, continued to be his leading object. He had a villa at Sedeikia near Smyrna, where he began his great herbarium. Hasselquist visited this spot, with the devotion of a pilgrim, in the spring of 1750. Whatever specimens Sherard could obtain from Greece, and the neighbouring countries, he here carefully preserved; and being well aware of the insufficiency of Bauhin's *Pinax*, as a clue to the botanical knowledge then in the world, he is said to have here formed the project of continuing it before he returned to his native country in 1718. Soon after his return he received at Oxford the degree of J.L. D. In 1721 Dr. Sherard revisited the continent. Vauillant was now in a declining state of health, and died in May 1722. Previous to his decease he concluded, through the mediation of Sherard, the sale of his manuscripts and drawings of Parisian plants, to Boerhaave, who published in 1727 the splendid *Botanicorum Parisiensis*. This work is said to have owed much to the superintendance of Sherard, who passed a summer with Boerhaave in revising the manuscript. Our great botanist had already rendered a more important service to his favorite science by bringing with him from Germany, in August 1721, the celebrated Dillenius. By a comparison of dates, it appears that Sherard made several visits to the continent. He went from Paris to Holland in 1721, and thence with Dillenius, the same year, to England. He staid some time with Boerhaave again in 1724, or perhaps 1725. We know not precisely when it happened that he was, like Linnaeus in Norway, in danger of being shot for a wolf, or a thief, by some rustic.

James Sherard, seven years younger than his brother, who had acquired opulence by medical practice in London, had a great fondness for the same pursuit, and reared at his country seat, at Eltham, a number of exotic plants. Hither the more learned subject of this article frequently resorted: and, having acquired affluence by his public appointments, he lent his aid to all who required it. He assisted Catesby with information and with money, to bring out his *Natural History of Carolina*, though neither that work, nor the *Hortus Elthamensis* of Dillenius, appeared till some time after his decease, which happened on the 12th of August, 1728, when he was sixty-nine years of age. His brother died February 12th, 1737, aged seventy-two, and is buried in Evington church, near Leicester. The most splendid service to botany, though it for a long time yielded little fruit, was rendered by the will of Dr. William Sherard, who left £3000 to found and support a botanical professorship at Oxford. He bequeathed to this establishment his choice botanical library, his ample herbarium, and the manuscript of his *Pinax*.

The herbarium of Sherard is considered, excepting that of Linnaeus, the most ample and valuable botanical record in the world. In it may be seen original specimens from Tournefort, and all the writers of that day, named by themselves, accompanied by remarks, or by queries. He collected also copies of original drawings, from botanists whose specimens were

not to be had, such as Plumier. The most rare, and even unique, books are to be found in his library. All these collections are still in good preservation, though the noble stone building, originally constructed to receive them, was sacrificed a few years since that the adjoining street might be widened.

**SHERARDIA**, in botany, little field madder, a genus of the monogynia order, and tetrandria class of plants; natural order forty-seventh, stellate: cal. small, and quadridentate: cor. monopetalous, long, and funnel-shaped: SEEDS two, naked, and crowned with the calyx. There are three species, viz. 1. *arvensis*; 2. *fruticosa*; and, 3. *muralis*.

**SHERBET**, n. s. Arab. *sharbat*. The juice of lemons or oranges mixed with water and sugar.

They prefer our beer above all other drinks; and considering that water is with the rarest, especially in this climate, the dearest of *sherbets*, and plenty of barley, it would prove infinitely profitable to such as should bring in the use thereof. *Sandys.*

**SHERBET**, or **SHERBIT**, was first brought into England from Turkey and Persia, consisting of water, lemon-juice, and sugar, in which are dissolved perfumed cakes made of excellent Damascus fruit, containing an infusion of some drops of rose water. Another kind of it is made of violets, honey, juice of raisins, &c.

**SHERBORNE**, a market-town and parish in the hundred and division of Sherborne, Dorsetshire, seventeen miles north by west from Dorchester, and 116½ W.S.W. from London; pleasantly situate on the side of a hill near the border of the White-Hart Forest, and divided into two parts, by the river Ivel, called Sherborne and Castleton; that part called Castleton had a strong castle, of which only the ruins are now to be seen. The inhabitants are employed in various trades and manufactures, principally in those of woollen cloth, linen, and silk. Anciently it was a bishopric; but, in the eleventh century, the see being removed to Salisbury, the cathedral was converted into an abbey. This was originally a noble structure; but, at the dissolution of the monasteries, it was made parochial, and is now the finest parish church in the west of England. The inside, beautifully decorated, contains many Saxon monuments of kings and nobles. Near the church is a free-school, built and endowed by Edward VI., and an alms-house for sixteen men and eight women. In the town is a market-house, a workhouse, a dissenters' chapel, and several schools and benefit societies. The general quarter-sessions are held here. The mansion called Sherborne Castle is a beautiful structure, the seat of lord Digby. Near Sherborne is White-Hart Forest. Market on Saturday. Fairs, the day before Holy Thursday, 18th and 26th of July, and the first Monday in October, O. S.

**SHERBRO**, a country and river of Western Africa, at the northern extremity of the Grain or Pepper coast of Guinea. The river, with a large island at its mouth, is navigable twenty leagues up for ships of burden, and vessels of seventy or eighty tons may ascend 250 miles. The channel, however, is encumbered with rushes, and subject to frequent tornadoes. The country abounds in

grain, fruits, poultry, and a species of pearl oyster.

SHERD, n. s. Sax. *recaud*. A fragment of broken earthenware. See SHARD.

The trivet-table of a foot was lame ;  
She thrusts beneath the limping leg a *sherd*.  
*Dryden.*

SHEREBATOF (Prince), a learned Russian nobleman, who published several works in the Russian language. Of these the principal is his History of Russia from the earliest Times ; which is a faithful and well written work.

SHERIBON, or CHERIBON, a town in the island of Java, the capital of a district of the same name, and situated about 150 miles east from Batavia. The surrounding country is remarkably fertile, and produces the finest coffee raised on the island. Its other productions are timber, cotton, yarn, areca, indigo, sugar, and some pepper. The horses of this district are reckoned the best in Java, and in the contiguous woods and mountains the rhinoceros is sometimes discovered. The roadsted at Cheribon is open, and only sheltered to the west by a large sand-bank, with four and a half and five fathoms water, two leagues from the shore, at which distance ships of burden are obliged to anchor. Smaller vessels run along the bank to within three-fourths of a league from the land. In order to enter the river, country craft, drawing from four to six feet, are obliged to wait for the high tides on account of the small bank at the mouth. The appearance of this place resembles a large village more than a town. It is at present the capital of a principality, divided between two princes of the same family, each of whom takes the title of sultan, and resides in it; but the exterior of their palace exhibits little of Asiatic pomp and grandeur, being built of plank and bamboos. On the right bank of the river is a small brick fort surrounded by a ditch, over which is a bridge protected by a redoubt. This fortress is of little strength, its embrasure parapet being only eighteen inches thick, with only four small guns, kept more for the purpose of making signals than for defence. The mole and battery are in a state of the greatest decay, and the garrison only fifteen Maduran soldiers, commanded by a European serjeant and two corporals; the whole scarcely sufficient to resist the attacks of the roving Malay pirates who infest the adjacent seas. The European inhabitants of the town are the resident, secretary, book-keeper, serjeant-major, and three subalterns; the rest are natives, who compose two-thirds of the population, and Chinese, employed in the retail trade and agriculture. This state put itself under the protection of the Dutch East India Company in 1680, since which justice and injustice have been administered by the princes of the country in conjunction with the resident on the part of the company. These chiefs are under an obligation to deliver to the Dutch East India Company exclusively the produce of their respective territories at fixed prices.—Tombe, Stavrinus, &c.

SHERIDAN (Thomas), D. D., the intimate friend of dean Swift, is said by Shield, in Cibber's Lives of the Poets, to have been born about 1684, in the county of Cavan, where his parents lived in no very elevated state. They are de-

scribed as being unable to afford their son the advantages of a liberal education; but he, being observed to give early indications of genius, attracted the notice of a friend to his family, who sent him to the college of Dublin, and contributed towards his support there. He afterwards entered into orders, and set up a school in Dublin, which long maintained a very high degree of reputation, as well for the attention bestowed on the morals of the scholars as for their proficiency in literature. So great was the estimation in which this seminary was held that it is asserted to have produced in some years the sum of £1000. It does not appear that he had any considerable preferment; but his intimacy with Swift, in 1725, procured for him a living in the south of Ireland worth about £150 a year, which he went to take possession of, and, by an act of inadvertence, destroyed all his future expectations of rising in the church; for being at Cork on the 1st of August, the anniversary of king George's accession, he preached a sermon on this text, 'Sufficient for the day is the evil thereof.' On this being known he was struck out of the list of chaplains to the lord lieutenant, and forbidden the castle. This living Dr. Sheridan afterwards changed for that of Dunboyne, which, by the knavery of the farmers and power of the gentlemen in the neighbourhood, fell so low as £80 per annum. He gave it up for the free school of Cavan, where he might have lived well in so cheap a country on £80 a year salary, besides his scholars; but the air being, as he said, too moist and unwholesome, and being disgusted with some persons who lived there, he sold the school for about £400; and, having soon spent the money, he fell into bad health, and died September 10th, 1738, in his fifty-fifth year. Lord Corke has given the following character of him: 'Dr. Sheridan was a school master, and in many instances perfectly well adapted for that station. He was deeply versed in the Greek and Roman languages, and in their customs and antiquities. He had that kind of good nature which absence of mind, indolence of body, and carelessness of fortune, produce; and, although not over strict in his own conduct, yet he took care of the morality of his scholars, whom he sent to the university remarkably well founded in all the kinds of classical learning, and not ill instructed in the social duties of life. He was slovenly, indigent, and cheerful. He knew books much better than men; and he knew the value of money least of all. In this situation, and with this disposition, Swift fastened upon him, as upon a prey with which he intended to regale himself, whenever his appetite should prompt him.' His lordship then mentions the event of the unlucky sermon, and adds, 'This ill-starred, good-natured, improvident man, returned to Dublin, unhinged from all favor at court, and even banished from the castle. But still he remained a punster, a quibbler, a fiddler, a wit. Not a day passed without a rebus, an anagram, or a madrigal. His pen and his fiddlestick were in continual motion.' One of the volumes of Swift's miscellanies consists almost entirely of letters between him and the dean. He published a prose translation of Persius; to which he added the best notes of former editors, with many judicious ones.

of his own. This work was printed at London, 1739, in 12mo.

SHERIDAN (Thomas), A. M., son of the doctor, and an eminent actor, philologist, and lexicographer, was born at Quilca, in Ireland, in 1721. In 1734 and 1735 he studied at Westminster; and, on his return to Ireland, attended Trinity College, Dublin, where he took his degree. On his father's death, he entered on the stage. His first appearance was at Dublin in 1743 in the character of Richard III., wherein he met with unbounded applause. In 1744 he came to London, and appeared in Hamlet at Covent Garden. In 1745 he engaged at Drury Lane, and performed Siffredi, in Tancred and Sigismunda. About this time a quarrel took place between Sheridan and Garrick, which was not made up when Sheridan left London. On his return to Dublin, he undertook the management of the Dublin theatre; and, finding that Mr. Garrick was then unemployed, he very politely invited him over, upon the most liberal terms, which Mr. Garrick accepted. But, though Miss Bellamy and Mr. Barry often acted along with them, they were not able to exhibit plays oftener than twice a-week, and the receipts for the season did not exceed £3400. Mean time, in winter 1747, Mr. Sheridan's popularity was interrupted, and the peace of the theatre disturbed, by the riotous behaviour of a young gentleman, who, being the worse for liquor, raised a quarrel, and formed such a powerful party that the theatre was obliged to be shut for some time. Two trials were commenced before the court of king's bench; the manager was tried for an assault on the young gentleman, and acquitted; but, in the other trial, the rioter was found guilty, and sentenced to pay a fine of £500, and to be imprisoned three months. After being confined one week, he made concessions to Mr. Sheridan, who solicited government to remit the fine, and succeeded. He also became bail himself for the young man's enlargement, and obtained it. This affair, so disagreeable in its commencement, and so honorable to Mr. Sheridan in its conclusion, was productive of a very fortunate event. During the public controversy about the riots, Miss Frances Chamberlaine, a most accomplished young lady, wrote a pamphlet in favor of the manager, which attracted Mr. Sheridan's attention and gratitude to such a degree that he soon after obtained an introduction to his fair champion, and married her. The harmony of the theatre, after this event, met with no interruption till 1754, when politics ran high. Mr. Sheridan had instituted a club, consisting of about fifty noblemen and members of parliament, who dined weekly at his apartment in the theatre. No lady was admitted but Mrs. Woffington, who presided. The manager had no party views, but Mrs. Woffington diverted it from its original design; and, the toasts being generally in favor of the court, Mr. Sheridan himself became obnoxious. On the 25th of February, 1754, Mr. Digges, in the tragedy of Mahomet, was encored for a speech that contained some severe imprecations against venal senators and couriers. Digges gratified the audience, repeated the speech, and received reiterated plaudits. In

the green-room Mr. Sheridan remarked Digges's conduct as a circumstance of self degradation. The tragedy was again acted, and Digges's speech again encored. Digges expressed his readiness to comply, but urged that his compliance would injure him with the manager. The vociferation for the manager then became universal. Sheridan, afraid of personal insult, went home. Repeated messages were sent for him in vain; and, after waiting a full hour, the audience rose in a mass and destroyed the inside of the house. Mr. Sheridan published a state of his case, left the theatre for two years, and embarked for England. At London he appeared, in 1754, on the Covent Garden boards in Hamlet. He also performed Coriolanus, Cato, Oedipus, Richard III., Shylock, lord Townly, Romeo, &c., but his profits fell short of his hopes. Besides, Garrick was a rival whom it was impossible for any man to rival. In 1756, the term of this theatre at Dublin being expired, he went over, in hopes that the public ferment was also expired. An apology, however, was deemed necessary: the house was crowded, and never did any man, in such a situation, appear with more address, or speak to the passions with so much propriety. Tears fell from many, and pardon was sealed by the plaudits of all. Rivalship, and opposition, however, arose from a new quarter. Barry and Woodward had engaged to erect a new theatre in Crow Street. Mr. Sheridan struggled to maintain his ground for three years; but gave it up on the 27th of April, 1759. Meantime, he had composed his Lectures on Elocution, and began to deliver them at London, Oxford, Cambridge, &c., with great success. In 1759 he took his degree at Cambridge. In 1760 he engaged with Mr. Garrick at Drury Lane. But the king's public approbation of Mr. Sheridan's John excited Garrick's jealousy so much that he would not permit that play to be again performed. Hence disputes arose, and they parted. In 1769 Mr. Sheridan exhibited at the Haymarket, the Attic Evening Entertainment, consisting of reading, singing, and music, and met with great success. Previous to this, in 1756, he had published British Education, or the Source of the Disorders of Great Britain; being an essay to prove that the immorality, ignorance, and false taste, which so generally prevail, are the consequences of the present defective system of education; &c. This was followed, in 1758, by a very spirited Oration on the Establishment of a Proper Mode of Education in Ireland. He had delivered it before the nobility and gentry at the Music Hall in Dublin, December 6th, 1757. In 1759 he published a discourse delivered at Oxford, introductory to his Lectures on Elocution. In 1762 appeared his Dissertation on the Causes of the Difficulties which occur in learning English: also his Course of Lectures on Elocution. In 1769 he published A Plan of Education for the Young Nobility and Gentry of Great Britain. In 1775 Lectures on the Art of Reading, and in 1780 his General Dictionary of the English Language; in 2 vols. 4to. Its main object is to establish a plain and permanent standard of pronunciation. In 1784 he published a new edition of Swift's

Works, in 17 vols. 8vo. His last work was, in 1785, *Elements of English; being a new method of teaching the whole art of reading*; 12mo. At the accession of his majesty, in 1760, a pension was conferred on Mr. Sheridan. He also gave lectures on reading in Scotland, where he was honored with much attention, by the principal literati. About 1764 he went to France, and resided at Blois, where his wife died. On Mr. Garrick's retiring from the stage, in 1776, the purchasers of his share in Drury Lane invested Mr. Sheridan with the powers of manager; but he relinquished it in 1779. In 1786 he visited Ireland, but returned to England, and died at Margate, August 14th, 1788.

**SURRIDAN** (Mrs. Frances), wife to the preceding, was born in Ireland about 1724, but descended from a good English family which had removed thither. Her maiden name was Chamberlaine. Her first literary performance procured her marriage. She was a person of the most engaging manners. After lingering some years in a very weak state of health, she died at Blois, in the South of France, September 26th, 1766. Her Sidney Biddulph may be ranked with the first productions of that class in our or any other language. She also wrote a little romance in one volume called *Nourjahad*, in which there is a great deal of imagination, productive of an admirable moral. And she was the authoress of two comedies, the *Discovery*, and the *Dupe*. By Mr. Sheridan, she became the mother of two splendid ornaments to this family of genius: viz. Charles Francis Sheridan, esq., late secretary at war in Ireland, and author of an excellent History of the Revolution in Sweden, in 1772; and Richard Brinsley Sheridan, esq., M. P., a celebrated dramatic writer, and one of the most eminent orators, and uniformly steady patriots in the British senate.

**SHERIDAN** (Richard Brinsley), esq., the third and youngest son of Thomas Sheridan, was distinguished both as a statesman and a dramatist. He was born in Dorset Street, Dublin, October 30th, 1751. The early development of his talents was greatly aided by the instructions of his mother: he was afterwards placed at a grammar school in Dublin, whence, in 1759, he was removed in consequence of his parents leaving Ireland. They settled at Windsor, and he remained at home till 1762, when he was sent to Harrow, which seminary he left at the age of eighteen, owing to his father's embarrassments. He entered subsequently as a student of the middle temple; but the close application and industry requisite for success as a lawyer were incompatible with his disposition; and an early marriage induced him to look out for some more immediate means of support. Having very soon after his marriage dissipated the moderate property with which he set out in the world, he turned his attention to dramatic composition. His first production was the comedy of the *Rivals*, acted at Covent Garden in January 1775, with moderate success; but the *Duenna*, a musical entertainment, which followed, was received with general admiration; and his *School for Scandal* gained him the highest reputation as a comic writer. On the retirement of Garrick from the

management of Drury Lane Theatre, Sheridan, in conjunction with Dr. Forde and Mr. Linley, purchased Garrick's share of the patent. This property qualified him for a seat in parliament; and in 1780 he was chosen member for the borough of Stafford. Sheridan joined the opposition, and displayed so much ability that on the retreat of the premier, and the conclusion of the American war, he was made under secretary of state for the war department. He resigned with his principal, in consequence of a dispute with lord Shelburne, afterwards marquis of Lansdowne, who was at the head of the ministry. His intimate connexion with Fox brought him again into office on the coalition of that statesman with lord North, when Sheridan held the post of joint secretary of the treasury under the late duke of Portland. The dissolution of that ministry threw him again into the ranks of opposition, where he remained during the whole period of the ministry of Mr. Pitt. He now attained distinguished celebrity as a parliamentary orator: but the grandest display of his eloquence occurred during the progress of the impeachment of Warren Hastings. In 1792 Mr. Sheridan lost his wife, who left one son; and three years afterwards married Miss Ogle, daughter of the dean of Winchester. With this lady he had a fortune, which enabled him to purchase the estate of Polesdon, in Surrey; and he held the office of receiver-general of the duchy of Cornwall, worth £1200 a year. The political changes consequent to the death of Mr. Pitt, in 1806, occasioned the exaltation of the party with which Sheridan was connected, and he obtained the lucrative post of treasurer of the navy, and the rank of a privy counsellor. This administration being weakened by the death of Mr. Fox, new alterations took place, and Sheridan was deprived of office, to which he never returned. At the election in 1806 he obtained a seat for Westminster, the great object of his ambition; but was afterwards nominated for the borough of Ilchester, which he continued to represent during the remainder of his public career. The latter part of the life of this talented individual was embittered by misfortunes, arising principally from his own indolence and mismanagement, the destruction of Drury Lane Theatre by fire, &c. When the affairs of that establishment were arranged, in 1811, Mr. Sheridan and his son were to have on various accounts £40,000 for their share of the property; but the portion of the former was not sufficient to liquidate his debts. The dissolution of parliament, and his failure in an attempt to obtain a seat for Stafford, the borough he had formerly represented, completed his ruin. In 1812 he had relinquished all thoughts of returning to the house of commons; and the remainder of his existence was spent in attempts to ward off the evils to which his improvidence had exposed him. At length the disappearance of his property was followed by arrest, and though, after a few days' detention, he was released, it was only to experience apprehension and alarm, from which he sought a temporary relief in that unrestrained indulgence which had occasioned his misfortunes. Intemperance had undermined his constitution; and, until on the

bel of death, he was not exempted from the terrors of arrest for debt; his death took place July 7th, 1816. Besides the plays already mentioned, Sheridan was the author of St. Patrick's Day, or the Scheming Lieutenant, a farce; A Trip to Scarborough, a comedy, altered from Vanbrugh; the Camp, a farce; the Critic, or the Tragedy Rehearsed; Robinson Crusoe, or Harlequin Friday, a pantomime; and Pizarro, a play, from the German of Kotzebue. He also wrote Verses to the Memory of Garrick, 1779, 4to.; and a Comparative Statement of the two Bills for the better Government of the British Possessions in India, 1788, 4to. As a dramatist he may be deemed the head of that line of comedy which exhibits the malice, detraction, intrigue, and persiflage, of the more cultivated stations of life. Like Congreve, Sheridan has incurred the imputation of giving a portion of wit to all his characters to a correspondent destruction of nature. This may be true, and still leave the School for Scandal the head of the comic modern drama in its own peculiar walk. The works of Sheridan appeared in 1821, in 2 vols. 8vo., edited by Mr. Thomas Moore, who has published an interesting life of our author.

SHERIDAN (Elizabeth), daughter of Thomas Linley, the musician, first wife of the celebrated R. B. Sheridan. She was alike distinguished for her beauty, her manners, and her musical talents. In Handel's pathetic songs, in Purcell's Mad Bess, in the upper part of serious glees, or in any vocal music expressive of passion, she was sure to delight. Sacchini, on hearing Miss Linley sing for the last time in public at Oxford, observed that, if she had been born in Italy, she would have been as much superior to all Italian singers as she was then to all of her own country. She relinquished her profession on her marriage with Sheridan in 1773; her death took place in 1792.

SHERIFF, *n. s.* { Sax. *reype*, *genepa*, from

SHERIFFALTY, } *reype*, a shire, and *neve*,

SHERIFFWICK. } a steward. Sometimes pronounced shrieve, which the poets have therefore injudiciously adopted. An officer to whom is entrusted, in each county, the execution of the laws (see below); his office.

A great power of English and of Scots  
Are by the sheriff of Yorkshire overthrown.

*Shakespeare.*

Concerning ministers of justice, the high sheriffs of the counties have been very ancient in this kingdom.

*Bacon.*

There was a resumption of patents of gaols, and reannexing of them to the *sheriffwicks*; privileged officers being no less an interruption of justice than privileged places.

*Bacon.*

Now mayors and *shrieves* all hushed and satiate lay.

*Pope.*

A SHERIFF is an officer, in each county in England, nominated by the king, invested with a judicial and ministerial power, and who takes place of every nobleman in the county during the time of his office. The office is of very-great antiquity. He is called in Latin *vice-comes*, as being the deputy of the *comes*, or earl, to whom the custody of the shire was committed at the first division of England into counties. But the earls, in process of time, by their high employ-

ments and attendance on the king's person, not being able to transact the business of the county, were delivered of that burden; reserving themselves the honor, but the labor was laid on the sheriff. So that now the sheriff does all the king's business in the county; and, though he be still called *vice-comes*, yet he is entirely independent of, and not subject to, the earl; the king, by his letters patent, committing custodiam comitatus to the sheriff, and to him alone. Sheriffs were formerly chosen by the inhabitants of the several counties. It was ordained by stat. 28 Edw. I. c. 8, that the people should have an election of sheriffs in every shire where the sherrifalty is not of inheritance. For anciently in some counties the sheriffs were hereditary: as they were in Scotland till the stat. 20 Geo. II. c. 43; and still continue in the county of Westmoreland to this day: the city of London having also the inheritance of the sherrifalty of Middlesex vested in their body by charter. The reason of these popular elections is assigned in the same statute, c. 13, 'that the commons might choose such as would not be a burden to them.' And herein appears plainly a strong trace of the democratical part of our constitution; in which form of government it is an indispensable requisite that the people should choose their own magistrates. This election, however, was not absolutely vested in the commons, but required the royal approbation. For, in the Gothic constitution, the judges of their county courts (which office is executed by the sheriff) were elected by the people, but confirmed by the king; and the form of their election was thus managed: the people, or incolæ territorii, chose twelve electors, and they nominated three persons, *ex quibus rex unum confirmabat*. But with us, in England, these popular elections, growing tumultuous, were put an end to by the stat. 9 Edw. II. st. 2, which enacted that the sheriffs should henceforth be assigned by the chancellor, treasurer, and the judges. By stat. 14 Edw. III. c. 7, 23 Hen. VI. c. 8, and 21 Hen. VIII. c. 20, the chancellor, treasurer, president of the king's council, chief justices, and chief baron, are to make this election; and that on the morrow of All Souls, in the exchequer. And the king's letters patent, appointing the new sheriffs, used commonly to bear date the 6th day of November. The stat. of Cambridge, 12 Rich. II. c. 2, ordains that the chancellor, treasurer, keeper of the privy seal, steward of the king's house, the king's chamberlain, clerk of the rolls, the justices of the one bench and the other, barons of the exchequer, and all other that shall be called to ordain, name, or make justices of the peace, sheriffs, and other officers of the king, shall be sworn to act indifferently, and to name no man that saeth to be put in office, but such only as they shall judge to be the best and most sufficient. And the custom now is (and has been since the time of Fortescue, chief justice and chancellor to Henry VI.) that all the judges, with the other great officers, meet in the exchequer chamber on the morrow of All Souls yearly (now altered to the morrow of St. Martin by the last act for abbreviating Michaelmas term), and then

and there propose three persons to the king, who afterwards appoints one of them to be sheriff. But, notwithstanding the unanimous resolution of all the judges of England to the above purpose, and the statute 34 and 35 Hen. VIII. c. 26. § 61, which expressly recognises to be the law of the land, some have affirmed that the king, by his prerogative, may name whom he pleases to be sheriff, whether chosen by the judges or not. This is grounded on a very particular case in the fifth year of queen Elizabeth, when by reason of the plague there was no Michaelmas term kept at Westminster; so that the judges could not meet there incastino animarum to nominate the sheriffs: whereupon the queen named them herself, without such previous assembly, appointing for the most part one of two remaining in the last year's list. And this case, thus circumstanced, is the only authority in our books for the making these extraordinary sheriffs. It is true, the reporter adds, that it was held that the queen by her prerogative might make a sheriff without the election of the judges non obstante aliquo statuto in contrarium; but the doctrine of non obstante, which sets the prerogative above the laws, was effectually demolished by the bill of rights at the revolution, and abdicated Westminster-hall when king James abdicated the kingdom. However, the practice of occasionally naming what are called pocket sheriffs, by the sole authority of the crown, uniformly continued to the reign of his late majesty; in which it is believed, few (if any) instances occurred. Sheriffs, by virtue of several old statutes, are to continue in their office no longer than one year; and yet it has been said that a sheriff may be appointed durante bene placito, or during the king's pleasure; and so is the form of the royal writ. Therefore, till a new sheriff be named, his office cannot be determined, unless by his own death, or the demise of the king; in which last case it was usual for the successors to send a new writ to the old sheriff; but now, by statute 1 Anne st. 1 c. 8, all officers appointed by the preceding king may hold their offices for six months after the king's demise, unless sooner displaced by the successor. By statute 1 Ric. II. c. 11, no man that has served the office of sheriff for one year can be compelled to serve the same again within three years after. The power and duty of a sheriff are either as a judge, as the keeper of the king's peace, as a ministerial officer of the superior courts of justice, or as the king's bailiff.

1. In his judicial capacity he is to hear and determine all causes of 40s. value and under, in his county court; and he has also a judicial power in divers other civil cases. He is likewise to decide the elections of knights of the shire (subject to the control of the house of commons), of coroners, and of verderers; to judge of the qualification of voters, and to return such as he shall determine to be duly elected.

2. As the keeper of the king's peace, both by common law and special commission, he is the first man in the county, and superior in rank to any nobleman therein during his office. He may apprehend and commit to prison all persons who break the peace, or attempt to break it; and may bind any

one in recognizance to keep the king's peace. He may, and is bound, ex officio, to pursue and take all traitors, murderers, felons, and other misdoers, and commit them to gaol for safe custody. He is also to defend his county against any of the king's enemies when they come into the land; and for this purpose, as well as for keeping the peace and pursuing felons, he may command all the people of his county to attend him; which is called the posse comitatus, or power of the county; which summons, every person above fifteen years old, and under the degree of a peer, is bound to attend upon warning, under pain of fine and imprisonment. But though the sheriff is thus the principal conservator of the peace in his county, yet, by the express directions of the great charter, he, together with the constable, coroner, and certain other officers of the king, are forbidden to hold any pleas of the crown, or, in other words, to try any criminal offence. For it would be highly unbecoming that the executioners of justice should be also the judges; should impose, as well as levy, fines and amercements; should one day condemn a man to death, and personally execute him the next. Neither may he act as an ordinary justice of the peace during the time of his office; for this would be equally inconsistent, he being in many respects the servant of the justices. 3. In his ministerial capacity, the sheriff is bound to execute all processes issuing from the king's courts of justice. In the commencement of civil causes, he is to serve the writ, to arrest, and to take bail; when the cause comes to trial, he must summon, and return the jury; when it is determined, he must see the judgment of the court carried into execution. In criminal matters, he also arrests and imprisons; he returns the jury; he has the custody of the delinquent, and he executes the sentence of the court, though it extend to death itself. 4. As the king's bailiff, it is his business to preserve the rights of the king within his bailiwick; for so his county is frequently called in the writs: a word introduced by the princes of the Norman line, in imitation of the French, whose territory was anciently divided into bailiwicks as that of England into counties. He must seize to the king's use all lands devolved to the crown by attainder or escheat; must levy all fines and forfeitures, must seize and keep all waifs, wrecks, estrays, and the like, unless they be granted to some subject; and must also collect the king's rents within his bailiwick, if commanded by process from the exchequer. To execute these various offices, the sheriff has under him many inferior officers; as under-sheriff, bailiffs, and gaolers, who must neither buy, sell, nor farm their offices on forfeiture of £500. The under-sheriff usually performs all the duties of the office; a very few only excepted, where the personal presence of the high sheriff is necessary. But no under-sheriff shall abide in his office above one year and if he does, by stat. 23 Hen. VI. c. 8, he forfeits £200, a very large penalty in those early days. And no under-sheriff or sheriff's officer shall practise as an attorney during the time he continues in such office: for this would be a great inlet to partiality and oppression. But

these salutary regulations are shamefully evaded, by practising in the names of other attorneys, and putting in sham deputies by way of nominal under-sheriffs: by reason of which, says Dalton, the under-sheriffs and bailiffs do grow so cunning in their several places that they are able to deceive, and it may well be feared that many of them do deceive, both the king, high-sheriff, and the county.

The Scotch sheriff differs very considerably from the English sheriff. The Scotch sheriff is properly a judge; and, by stat. 20 Geo. II. c. 43, he must be a lawyer of three years' standing: and is declared incapable of acting in any cause for the county of which he is sheriff. He is called sheriff depute: he must reside within the county four months in the year: he holds his office *ad vitam aut culpam*. He may appoint substitutes, who as well as himself receive stated salaries. The king may appoint a high-sheriff for the term of one year only. The civil jurisdiction of the sheriff depute extends to all personal actions on contract, bond, or obligation, to the greatest extent: and generally in all civil matters not especially committed to other courts. His criminal jurisdiction extends to the trial of murder, though the regular circuits of the court of judicature prevent such trials occurring before him. He takes cognizance of theft and other felonies, and all offences against the police. His ministerial duties are similar to those of sheriffs in England.

The lord mayor and citizens of London have the shrievalty of London and Middlesex in fee, by charter; and two sheriffs are annually elected by them, for whom they are to be answerable. If one of these sheriffs dies, the other cannot act till another is made; and there must be two sheriffs of London, which is a city and county; though they make but one sheriff of the county of Middlesex; they are several as to plaintiffs in their respective courts. 3 Rep. 72: Show. Rep. 289.

SHERLOCK (Dr. Richard), an English divine, who was educated first at Magdalene College Oxford, and afterwards at Trinity College Dublin. During the civil war he came to England, where he was appointed chaplain of a regiment. About 1660 he received the degree of D. D. from the university of Dublin, and was presented by the earl of Derby with the rich benefice of Winwick. He wrote a treatise entitled *The Practical Christian*, and died in 1689.

SHERLOCK (Dr. William), a learned English divine, born in 1641, and educated at Eton school, where he distinguished himself by the vigor of his genius. Thence he was removed to Cambridge, where he took his degrees. In 1669 he became rector of the parish of St. George, Botolph Lane, London; and in 1681 prebendary of Pancras, in the cathedral of St. Paul's. He was likewise chosen master of the Temple and rector of Therfeld in Hertfordshire. After the Revolution he was suspended for refusing the oaths to king William and queen Mary; but at last he took them, and publicly justified what he had done. In 1691 he was installed dean of St. Paul's. His Vindication of the Doctrine of the Trinity engaged him in a warm controversy

with Dr. South and others. Bishop Burnet says he was ‘a clear, a polite, and a strong writer; but apt to assume too much to himself, and to treat his adversaries with contempt.’ He died in 1702. His works are very numerous; among these are, 1. A Discourse concerning the Knowledge of Jesus Christ, against Dr. Owen. 2. Several pieces against the Papists, the Socinians, and Dissenters. 3. A Practical Treatise on Death, which is much admired. 4. A practical Discourse on Providence. 5. A practical Discourse on the future judgment; and many other works.

SHERLOCK (Thomas), D. D., bishop of London, the son of the preceding, was born in 1678. He was educated in Catherine Hall, Cambridge, where he took his degrees, and of which he became master; he was made master of the Temple very young, on the resignation of his father; and it is remarkable that this mastership was held by father and son successively for more than seventy years. He was at the head of the opposition against Dr. Hoadly bishop of Bangor; during which contest he published a great number of pieces. He attacked the famous Collins's Grounds and Reasons of the Christian Religion, in a course of six sermons, preached at the Temple church, which he entitled *The Use and Intent of Prophecy in the several Ages of the World*. In 1728 he was appointed bishop of Bangor; and of Salisbury in 1734. In 1747 he refused the archbishopric of Canterbury, on account of ill health; but, recovering, he accepted the see of London in 1748. On occasion of the earthquakes, in 1750, he published an excellent Pastoral Letter to the clergy and inhabitants of London and Westminster: of which it is said there were printed in 4to. 5000 copies; in 8vo. 20,000; and in 12mo. about 30,000; besides pirated editions, of which not less than 50,000 were said to have been sold. Under the weak state of body in which he lay for several years, he revised and published 4 vols. of Sermons in 8vo, which are particularly admired for their ingenuity and elegance. He died in 1762, worth £150,000.

‘His learning,’ says Dr. Nicholls, ‘was very extensive: God had given him an understanding mind, a quick comprehension, and a solid judgment. His skill in the civil and canon law was very considerable; to which he added such a knowledge of the common law of England as few clergymen attain to.’ Dr. Nicholls mentions also his exemplary piety, his zeal in preaching the duties, and maintaining the doctrines of Christianity, and his diffusive munificence and charity; particularly to the corporation of clergymen’s sons, to several hospitals, and to the society for propagating the gospel in foreign parts: his bequeathing to Catherine Hall in Cambridge, the place of his education, his valuable library of books, and his donations for the founding a librarian’s place and a scholarship, to the amount of several thousand pounds.

SHERIFFE of MECCA, the title of the descendants of Mahomet by Hassan Ibn Ali. These are divided into several branches, of which the family of Ali Bunemi, consisting at least of 300 individuals, enjoy the whole right to the throne of Mecca. The Ali Bunemi are again subdivided into two subordinate branches, Darii

Sajid, and Darii Barkad ; of whom sometimes the one, sometimes the other, have given sovereigns to Mecca and Medina, when these were separate states. Not only is the Turkish sultan indifferent about the order of succession in this family, but he seems even to foment the dissensions which arise among them, and favors the strongest, merely that he may weaken them all. As the order of succession is not determinately fixed, and the sherriffes may all aspire alike to the sovereign power, this uncertainty of right, aided by the intrigues of the Turkish officers, occasions frequent revolutions. The grand sherriffe is seldom able to maintain himself on the throne ; and it still seldom happens that his reign is not disturbed by the revolt of his nearest relations. There have been instances of a nephew succeeding his uncle, an uncle succeeding his nephew : and sometimes of a person, from a remote branch, coming in the room of the reigning prince of the ancient house. When Niebuhr was in Arabia, 1763, the reigning sherriffe had sat fourteen years on the throne, and during all that period had been continually at war with the neighbouring Arabs, and with his own nearest relations. A few years before the pacha of Syria had deposed him, and raised his younger brother to the sovereign dignity in his stead. But after the departure of the caravan, Jafar, the new sherriffe, not being able to maintain himself on the throne, was obliged to resign the sovereignty again to Mesad. Achmet, the second brother of the sherriffe, who was beloved by the Arabs, threatened to attack Mecca while Niebuhr was at Jidda. Our traveller was soon after informed of the termination of the quarrel, and of Achmet's return to Mecca, where he continued to live peaceably in a private character. The dominions of the sherriffe comprehended the cities of Mecca, Medina, Jambo, Taaif, Sadie, Ghunfude, Hali, and thirteen others less considerable, all situated in Hedjas. Near Taaif is the lofty mountain of Gazvan, which, according to Arabian authors, is covered with snow in the midst of summer. As these dominions are neither opulent nor extensive, the revenue of their sovereign cannot be considerable. He finds a rich resource, however, in the imposts levied upon pilgrims, and in the gratuities offered him by Mussulman monarchs. Every pilgrim pays a tax of from ten to 100 crowns, in proportion to his ability. The great Mogul remits annually 60,000 rupees to the sherriffe, by an assignment upon the government of Surat. Indeed, since the English made themselves masters of this city and the territories belonging to it, the nabob of Surat has no longer been able to pay the sum. The sherriffe once demanded it of the English possessors of Surat ; and, till they should satisfy him, forbade their captains to leave the port of Jidda. But, the English disregarding this prohibition, the sherriffe complained to the Ottoman Porte, and they communicated his complaints to the English ambassador. He at the same time opened a negotiation with the nominal nabob, who resides at Surat. But these steps proved all fruitless : and the sovereign of Mecca seems not likely to be ever more benefited by the contribution from India. The power of the sherriffe

extends not to spiritual matters ; these are entirely managed by the heads of the clergy, of different sects, who reside at Mecca. Rigid Mussulmans, such as the Turks, are not very favorable in their sentiments of the sherriffes, but suspect their orthodoxy, and look upon them as secretly attached to the tolerant sect of the Zedi.

**SHERRIS, n. s.** } From Xeres, a town of  
SHERRIS SACK, } Andalusia in Spain. A  
SHERRY. } kind of Spanish wine.

Your *sherris* warms the blood, which, before cold and settled, left the liver white, which is the badge of pusillanimity ; but the *sherris* makes it course from the inwards to the parts extreme. *Shakspeare.*

Good *sherris sack* ascends me into the brain, dries me there all the foolish dull vapours, and makes it apprehensive. *Id.*

**SHERSHELL,** a town of Africa, in Algiers, supposed to be the ancient Jol, which was called Cesarea by Juba II. in honor of Augustus Cesar. The ruins upon which it is situated are not inferior in extent to those of ancient Carthage ; and its former magnificence appears from its numerous fine pillars, capitals, mosaic pavements, capacious cisterns, and other relics of antiquity that are still to be seen. Tradition says that all this catastrophe was occasioned by a great earthquake ; and that the harbour, formerly large and commodious, was destroyed and choked up by the arsenal and other adjacent buildings being thrown into it by the shock. This tradition, though not recorded in history, is confirmed by the rubbish, walls, pillars, marbles, &c., being distinctly visible at low water, as well as by another recent catastrophe of the same kind ; for in 1738 this city was entirely overthrown by another earthquake. In 1730, eight years before this last catastrophe, Dr. Shaw visited it, and describes it as then in high reputation for manufactures in iron and steel, earthen wares, &c. What remains of the harbour is nearly of a circular form, about 200 yards in diameter, and has an island in the middle of it ; which, being a high rock, is its chief defence against the blasts of Boreas. Long.  $2^{\circ} 36' E.$ , lat.  $36^{\circ} 35' N.$

**SHERWIN** (John Keyse), an eminent modern English engraver, was originally a wood cutter on the estate of Mr. Mitford, in Sussex ; but going one day to that gentleman's house on some business, he was admitted into a room where some of the family were drawing, to whom he paid such attention that Mr. Mitford asked him if he could draw any ? Sherwin replied 'he could not tell, but should like to try :' on which a portcrayon was given him, when he immediately produced a drawing that astonished not only all present, but the Society of Arts, to whom Mr. Mitford presented it, and who voted him their silver prize medal in consequence. Being soon after removed to London he entered under Bartolozzi, and in three years made such surprising proficiency that he obtained both the gold and the silver prize medals given by the society. After this he executed many capital engravings ; among which his *Finding of Moses* is esteemed one of the best works of the present age. He died in 1790.

**SHERWOOD,** a spacious forest in the west

part of Nottinghamshire, which formerly occupied the greatest part of it. It was so thick that it was hardly passable; but it is now thinner, and its extent is much contracted. In the twelfth and thirteenth centuries this forest was the head quarter of Robin Hood, Little John, and their gang of thieves. It now feeds a vast number of deer and stags; and has some towns in it, of which Mansfield is the chief. It abounds in coal, and a road lies through it for thirty miles together. Since the reign of king Edward I. the nobility and gentry have had grants of it. It was once governed by a great number of officers under the earl of Chesterfield, chief forester; whose ancestor, Sir John Stanhope, had a grant of it, with liberty to kill deer at pleasure, reserving only 100 deer in the whole walk.

**S H E T L A N D,** or **Z E T L A N D**, the name of certain islands belonging to Scotland, and lying north-east of Orkney, between lat.  $59^{\circ} 56'$  and  $61^{\circ} 11'$ . There are many convincing proofs that these islands were very early inhabited by the Picts, or rather by those nations who were the original possessors of the Orkneys; and at the time of the total destruction of these nations, if any credit be due to tradition, their woods were entirely ruined, either by the Scots or Norwegians. It is highly probable that the people in Shetland, as well as in the Orkneys, flourished under their own princes dependent upon the crown of Norway; yet this seems to have been rather through what they acquired by fishing and commerce than by the cultivation of their lands. Many reasons might be assigned why these islands, though part of our dominions, have not hitherto been better known to us. They were commonly placed two degrees too far to the north in all the old maps, to make them agree with Ptolemy's description of Thule, which he asserted to be in lat.  $23^{\circ}$ ; which we find urged by Canden as a reason why Thule must be one of the Shetland isles, to which Speed also agrees, though from their being thus wrong placed he could not find room for them in his maps. Another cause was the many false and fabulous relations published concerning them, as if they were countries inhospitable and uninhabitable; and, lastly, the indifference or rather indifference of the natives, who, contenting themselves with those necessities and conveniences procured by their intercourse with other nations, and conceiving themselves neglected by the mother country, have seldom troubled her with their applications. There are few countries that have gone by more names than these islands: they were called in Icelandic Hialtalandia, from hialt the hilt of a sword; this might be corrupted into Hieland, Hitland, or Hethland, though some tell us this signifies a high land. They have been likewise, and are still in some maps, called Zetland and Zealand, in reference, as has been supposed, to their situation. By the Danes and by the natives they are styled Yeaftaland; and, notwithstanding the oddness of the orthography, this differs very little if at all from their manner of pronouncing Zetland, out of which pronunciation grew the modern names of Shetland and Shotland.

The Shetland Isles contain nearly three times as much land as the Orkneys; they are consi-

dered also as equal in size to the island of Madeira, and not inferior to the provinces of Utrecht, Zealand, and all the rest of the Dutch islands taken together; but of climate and soil they have little to boast. The longest day in the island of Unst is nineteen hours fifteen minutes, and of consequence the shortest day four hours and forty-five minutes. The spring is very late, the summer very short; the autumn also is of no long duration, dark, foggy, and rainy; the winter sets in about November and lasts till April, and sometimes till May. They have frequently in that season storms of thunder, much rain, but little frost or snow. High winds are indeed very frequent and very troublesome, yet they seldom produce any terrible effects. The aurora borealis is as common here as in any of the northern countries, and it contributes greatly to dispel the gloom of the long winter nights; as the splendor of its irradiations through the whole atmosphere often affords a light equal to that of the full moon. See *AURORA BOREALIS*. In winter the sea swells and rages in such a manner that for five or six months their ports are inaccessible, and the people during that space have no correspondence with the rest of the world.

'These islands,' says Mr. Jameson, F.A.S.S., and F. R. M. S., in his *Mineralogy of the Shetland Islands*, 'are very numerous, but few of them of any considerable magnitude; thirty-three of them are inhabited. On viewing these islands in general a wonderful scene of rugged, bleak, and barren rocks, presents itself to view. No tree or shrub is to be seen to relieve the eye in wandering over these dreary scenes. Sometimes, however, a few scanty portions of cultivated ground catch the eye of the traveller, exciting emotions of pleasure, and forming a striking contrast to the barren heath-covered mountains which skirt them. The coasts are in general rugged and precipitous, presenting in many places scenes truly grand and magnificent; vast rocks of various heights dreadfully rugged and broken, opposing their rude fronts to all the fury of a tempestuous ocean; which in some places has formed great detached pillars, in others has excavated great natural arches and caverns, that mock all human magnificence, and strike the beholder with that awe and wonder which must affect every one on viewing these amazing wrecks of nature.'

The Shetland Islands are well situated for trade. The nearest continent to them is Norway; the port of Bergen lying forty-four leagues east whereas they lie forty-six leagues N.N.E. of Buchanness; about seventeen or eighteen E.N.E. of Sanda, one of the Orkneys; six or seven north-east of Fair Isle; fifty-eight east of Ferroe Isles; and at nearly the same distance north-east of Lewis. The southern promontory of the main land, called Sumburgh Head, lies  $59^{\circ} 59'$  lat. N., and the north extremity of Unst, the most remote of them all, in lat.  $61^{\circ} 15'$ . The meridian of London passes through this last island, which lies about  $2^{\circ} 30'$  W. of Paris, and about  $5^{\circ} 15'$  E. of cape Lizard.

The ancient history of these islands, like that of most other countries, is lost in the wreck of time. It is even uncertain who were the first

inhabitants. The general opinion is that they were first settled by a colony of Norwegians; but the Rev. James Gordon thinks it more probable that the Picts were the first who settled in them, for the following reasons:—1. We have no accounts in ancient history that the Danes were possessed of these islands previous to the year 830; when the Picts were so completely defeated and dispersed by Kenneth II. that they were obliged to desert their ancient territories and fly northward, as recorded by Bede, Boece, and all our ancient historians. 2. The Frith that divides Caithness from Orkney is often called the Pictland Frith, from a great number of the Picts having been drowned in it in their flight from the Scots after Kenneth's victory. As the whole of the Picts who got safe landed in Orkney could not be accommodated in that country, a great number of them set sail again for the next land which was in view, viz. the island of Fowla; but, this being still too small to accommodate them all, they were at a loss what course to take, till some of them observing a thick mist, directly north-east of Fowla, they steered towards it, and the first person who observed the land cried out, 'There is zet land, and we shall be safe,'—zet being the ancient spelling at least, if it was not the pronunciation of the word yet; and hence it was named Zetland. This use of the Z instead of Y was retained in Scotland so late as the reign of queen Mary, when books in the Scottish language were printed at Edinburgh with the words ze, zow, and zieres, for ye, you, and yours. And the same orthography is still retained in MacKenzie, Menzies, Zuill (for Yule), and some other surnames in Scotland. The Picts accordingly settled on the Zetland Isles, which till that period had never been inhabited, and erected broughs or castles on the highest hills in each of the islands, that by lighting fires in them they might all have speedy warning of the approach of an enemy within less than an hour. Having thus secured themselves they sent ambassadors to the court of Norway, soliciting assistance to recover their ancient country from the Caledonians. Harold, then king of Norway, being a warlike prince, readily complied, espoused their cause, and sent a powerful fleet, which landed on the isle of Fetlar; but, as no safe anchorage could be procured on that coast, they sailed to the isle of Unst, to a bay which still retains his name, being called Harold's Wick; and this is still the tradition of the country respecting this name. Harold remained in this bay with his fleet till he had collected all the Picts in Scotland able to bear arms; when he set sail for the coast of Sutherland and Caithness; both of which countries he soon conquered, and they remained tributary to the crown of Norway till the end of the twelfth century; when William the Lion, king of Scots, conquered the Norwegians, and re-annexed these two countries to Scotland. The Picts, being thus frustrated in their hopes of recovering their ancient dominions, contented themselves with returning to Orkney and Zetland again; and, being joined by a great number of Danish adventurers, they intermarried together, and became one people, acknowledging the king of Denmark as their sovereign. At last they were finally ceded by

Christian IV., king of Denmark and Norway, to king James VI. by way of dowry, with his daughter the princess Anne. See SCOTLAND.

The inhabitants are a stout well-made people; the lower sort of a swarthy complexion, hardy, robust, and laborious people. Generally speaking they get their bread by fishing in all weathers in their yawls, which are little bigger than Gravesend wherries; live hardily, and in the summer season mostly on fish; their drink, which, in reference to the British dominions, is peculiar to the country, is called bland, and is a sort of butter-milk, long kept, and very sour. Many live to a great age; while others, by drinking great quantities of malt spirits of the very worst sort, are afflicted with an inveterate scurvy; but the majority enjoy as good health as in any other country in Europe. They have no great propensity to agriculture, and are persuaded that their country is not fit for it. But they are very successful in their pasture grounds, which are kept well enclosed, in good order, and, together with their commons, supply them plentifully with beef and mutton. They pay their rents generally in butter at Lammas, and in money at Martinmas. As they find no difficulty in providing for a family they marry very early, and a bachelor is considered as a sort of phenomenon. All that is requisite to enter on a married life in Shetland is a cow, a small hut, a pot, a yawl and fishing-tackle, and a rug or blanket. With these, though their crops could not maintain them above eight months in the year, yet, by the immense quantities of fish they catch, the cheapness of provisions in general, and the abundance of fuel, they live as comfortably, or more so, than most people of the same rank on the continent of Scotland.

The chief of the thirty-three inhabited islands of Shetland are, MAINEAND, YELL, UNST, BRESSAY, BURRAY, QUARFF, HAVERA, HOUSE, NOSS, FETLAR, FAIR, FOWLA, PAPASTOUR, the RHOES, SKERRIES, TRONDRAY, and WHALSAY. See these articles. The inhabitants of the Shetland Islands elect delegates, who join with those of the Orkney Islands in electing a representative in the British parliament. There are considerable quantities of marl in different islands, though they use but little; hitherto there has been no chalk found; limestone and freestone there are in the southern parts of the main land in great quantities, and also in the neighbouring islands, particularly Fetlar; and considerable quantities of slate, very good in its kind. No mines have been hitherto wrought, though there are in many places appearances of several kinds of metal. Some solid pieces of silver, it is said, have been turned up by the plough. In some of the smaller isles there are strong appearances of iron. See Jameson's Mineralogy.

The black cattle in this country are in general of a larger sort than in Orkney, which is owing to their having more extensive pastures; a clear proof that still farther improvements might be made in respect to size. Their horses, called Shelties, are small, but strong, stout, and well shaped, live very hardy, and to a great age. They have likewise a breed of small swine, the flesh of which, when fat, is esteemed very deli-

cious. They have also a breed of small sheep, whose wool is equal, if not superior, to the finest Spanish wool. Otters, seals, and other amphibious animals, abound greatly on the coasts. They have no goats, hares, or foxes; in general no wild or venomous creatures of any kind; but there are rats in some few islands. They have no moor-fowl, which is the more remarkable as there are every where immense quantities of heath; but there are many sorts of wild and water-fowls, particularly the dunter, clack, and solan geese, swans, ducks, teal, whaps, foists, lyres, kittiwarks, gulls, maws, plovers, cormorants, &c. There is likewise the amber goose, which is said to hatch her egg under her wing. Eagles, hawks, ravens, crows, mews, &c., abound here; and every person who kills an eagle is entitled to a reward of 5s. from the commissioners of supply.

All these islands are well watered; and there are every where excellent springs, some of them mineral and medicinal. They have, indeed, no rivers; but many pleasant burns, rills, or rivulets, of different sizes; in some of the largest they have admirable trouts, some of which are of fifteen and even of twenty pounds weight; and some of the larger rivulets even have salmon. They have likewise many fresh-water lakes, well stored with trouts and eels, and in most of them there are also large and fine flounders, in some very excellent cod. These fresh-water lakes, if the country was better peopled, and the common people more at their ease, are certainly capable of great improvement. They have, besides, haddock, whiting, turbot, and a variety of other sea-fish. In many of the inlets there are prodigious quantities of excellent oysters, lobsters, mussels, cockles, and other shell-fish. Amber, ambergris, and other spoils of the ocean, are frequently found upon the coasts.

**S H E T L A N D,** **M A I N L A N D** of, the largest of the Shetland islands, extends sixty miles from north to south, and is from six to eighteen in breadth. The interior parts are mountainous, craggy, and barren; but along the shores are verdant spots. The coast is so deeply indented with voes, or inlets of the sea, that no part of the island is five miles distant from some creek or harbour; while the extent of the coast, including all its windings, may be 300 miles. The hills run, in the longest direction of the island, from north to south; but none of them is very high, except Rona, near the north-west coast, which is between 1500 and 2000 feet above the level of the sea. On the highest eminence is a watch-house constructed of four large stones, and two covering the top for a roof. It will contain six or seven persons. The east side of the island is comparatively low; but the cliffs on the western coast are steep and irregular. There are many small fresh-water lakes, and some mineral springs impregnated with iron. Remains of what are called Picts' houses abound in this island. The soil is unfavorable for vegetation; and agriculture is little attended to. The best crops are black oats and bear, which would not supply the inhabitants nine months in the year. The hills are mostly covered with heath, and afford good pasture for black cattle and sheep, which, after receiving the mark of their owner, run wild, without the attendance of any shepherd. A con-

siderable number of sheep and black cattle are purchased by the Lerwick merchants, who kill them, and either send them to Leith, or to the Greenland and other vessels which rendezvous in Bressay Sound. They have also a very small but hardy breed of horses, called Shetland poneys; and a peculiar breed of swine, the flesh of which is esteemed very delicate. Eagles, hawks, ravens, and other birds of prey, are numerous, and so destructive to the lambs that the commissioners of supply give a crown for every eagle destroyed. Swans, in great numbers, annually visit this island, and geese and ducks abound. Bare of trees except roan and willow. Metallic ore found, iron, copper, lead, and silver. A copper mine was formerly wrought: at present its chief mineral production is limestone and excellent slate. Manufactories of woollen and linen are conducted on a small scale, but the chief occupation is fishing. The island is divided into eight parishes, and contains about 14,000 souls.

A Description of the Shetland Islands, comprising an Account of their Geology, Scenery, Antiquities, and Superstitions, has recently been published by Dr. Hibbert, and will be perused with interest by the geologist, the antiquary, and the general reader. We limit our extracts at present to those objects of general science which he so ably brings forward.

*Account of the pursuit and capture of a drove of whales.*—I had landed at Mr. Leisk's of Butra Voe in Yell, when a fishing-boat arrived with the intelligence that a drove of Ca'ing whales had entered Yell Sound. Females and boys, on hearing the news, issued from the cottages in every direction, making the hills reverberate with joyful exclamations of the event. The fishermen armed themselves with a rude sort of harpoon, formed from long iron-pointed spits; they hurried to the strand, launched their boats, and at the same time stored the bottom of them with loose stones. Thus was a large fleet of yawls soon collected from various points of the coast, which proceeded towards the entrance of the sound. Some slight irregular ripples among the waves showed the place where a shoal of whales were advancing. They might be seen sporting on the surface of the ocean for at least a quarter of an hour, disappearing and rising again to blow. The main object was to drive them upon the sandy shore of Hamna Voe, and it was soon evident that, with their enemy in their rear, they were taking this direction. Most of the boats were ranged in a semicircular form, being at the distance of about fifty yards from the animals. A few skiffs, however, acted as a force of reserve, keeping at some little distance from the main body, so that they might be in readiness to intercept the whales, should they change their course. The sable herd appeared to follow certain leaders; who, it was soon feared, were inclined to take any other route than that which led to the shallows on which they might ground. Immediately the detached crews rowed with all their might, in order to drive back the fugitives, and, by means of loud cries and large stones thrown into the water, at last succeeded in causing them to resume their previous course. In this temporary diversion from the shore the van of the boats was

thrown into confusion; and it was a highly interesting scene to witness the dexterity with which the Shetlanders handled their oars, and took up a new semicircular position in rear of the whales. Again the cetacea hesitated to proceed into the inlet, and again a reserve of boats intercepted them in their attempt to escape, while a fresh line of attack was assumed by the main body of the pursuers. It was thus that the whales were at length compelled to enter the harbour of Hamna Voe. Then did the air resound with the shouts that were set up by the boatmen, while stones were flung at the terrified animals, in order to force them upon the sandy shore of a small creek; but, before this object could be effected, the whales turned several times, and were as often driven back. None of them, however, were yet struck with the harpoon; for, if they were to feel themselves wounded in deep water, they would at all hazards betake themselves to the open sea. The leaders of the drove soon began to ground, emitting at the same time a faint murmuring cry, as if for relief; the sand at the bottom of the bay was disturbed, and the water was losing its transparency. The shoal of whales which followed increased, as they struck the shore, the muddiness of the bay; they madly rolled about, irresolute from the want of leaders, uncertain of their course, and so intimidated by the shouts of the boatmen, and the stones that were thrown into the water, as to be easily prevented from regaining the ocean. Crowds of natives of each sex, and of all ages, were anxiously collected on the banks of the Voe, hailing with loud acclamations the approach of these visitants from the northern seas; and then began the work of death. Two men, armed with sharp iron spits, rushed breast high into the water, and, seizing each a fin of the nearest whale, bore him unresistingly along to the shallowest part of the shore. One of the deadly foes of this meekest of the inhabitants of the sea deliberately lifted up a fin, and beneath it plunged into the body of the animal the harpoon that he grasped, so as to reach the large vessels of the heart. A long state of insensibility followed, succeeded by the most dreadful convulsions; the victim lashed the water with his tail, and deluged the land for a considerable distance: another death-like pause ensued; throes still fainter and fainter were repeated with shorter intermissions, until at length he lay motionless on the strand. The butchers afterwards set off in a different direction, being joined by other persons assuming the same functions. Female whales, appearing by their hasty and uncertain course to have been wrested from their progeny, and sucklings no less anxiously in quest of those from whose breasts they had received their nutriment, were, by the relentless steel of the harpooner, severally arrested in their pursuit. Numerous whales which had received their death-wound soon lined the bay, while others, at a greater distance, were rolling about among the muddy and crimsoned waves, doubtful whether to flee, and appearing like oxen to wait the return of their slaughterer. Wanton boys and females, in their anxiety to take a share of the massacre, might be observed to rankle with new tortures the gaping wound

that had been made; while, in their blood-thirsty exultation, they appeared to surpass those whose more immediate duty it was to expedite the direful business. At length the sun set upon a bay that seemed one sheet of blood: not a whale was allowed to escape; and the strand was strewed over with carcasses of all sizes, measuring from six to twenty feet, and amounting to not fewer than eighty in number. Several of the natives then went to their homes in order to obtain a short repose; but, as the twilight in this northern latitude was so bright as to give little or no token of the sun's departure, many were unremittingly intent upon securing the profit of their labor, by separating the blubber, which was of the thickness of three or four inches. It was supposed that the best of these whales would yield about a barrel of oil; and it was loosely computed that they were on an average worth from £2 to £3 sterling a piece, the value of the largest being as much as £6.

The division of the profits that accrue from these whales was, from very ancient times, regulated by strict laws, which on the introduction of feudalism varied from those of Denmark. 'As soon,' says Mr. Gifford, 'as the whales are got ashore, the bailie of the parish is advertised, who comes to the place, and takes care that none of them are embezzled; and he acquaints the admiral thereof, who forthwith goes there, and holds a court, where the fiscal presents a petition, narrating the number of whales, how and whèré drove ashore; and that the judge thereof may give judgment thereupon, according to law and the country practice. Whereupon the admiral ordains the whales driven on shore to be divided into three equal parts; one of the parts to belong to the admiral, one part to the salvors, and one-third to the proprietor of the ground on which the whales are driven ashore; and he appoints two honest men, who are judicially sworn, to divide them equally. The minister or vicar claims the tithes of the whole, and commonly gets it; the bailie also claims the heads for his attendance, and, if the admiral finds he has done his duty, the heads are decerned to him, otherwise not.' In consequence, however, of frequent disputes that took place on this tripartite division of the whales, the earl of Morton, who was invested with the droits of admiralty, appears to have compounded with the landed proprietors of Shetland, by agreeing to accept a definite sum for his share of the capture; but his successors have, I believe, relinquished the claim altogether.

*Account of the ling fishery at the Haaf.*—On the north of the parish of Northmavine the low hilly ridges, formed by the sea into deep fissures or caverns, terminate in a line of ragged coast, agreeably diversified by a long narrow peninsula of green land jutting out far into the Northern Ocean, which is named Feideland, an appellation of true Scandinavian origin, that is explained by Debes in his description of Feroe. He observes that where grass is found so abundant and juicy, that oxen feed thereon both winter and summer, such places are named Feidelands; and it is very remarkable, he adds, that where there are any Feidelands they invariably turn to the north-east and north. Every where the coast is

awfully wild, the peninsula is broken on each side into steep precipices, exhibiting now and then a gaping chasm, through which the sea struggles, while numerous stacks rise from the surface of a turbulent ocean,—the waves beating around them in angry and tumultuous roar. This is a great station for the ling fishery, which commences in the middle of May, and ends on the 12th of August. When any fishermen resort, for the first time, to a convenient place of this kind, they are allowed by the law to build for themselves huts, on any site which may be unenclosed, uncultivated, and at a distance of not more than 100 yards from the high water-mark. These are constructed of rude stones, without any cement, being made no larger than is sufficient to contain a six-oared boat's crew. The men form the roof of thin pieces of wood, on which they lay turf;—they then strew a little straw upon the ground, and snatch from their severe labors a short repose. On the narrow isthmus of low marshy land, that connects the peninsula of Feideland to the mainland, is interspersed, with all the disorder of a gypsy encampment, a number of these savage huts named summer lodges, and in the centre of them is a substantial booth, used by a factor for curing fish. Here I met with excellent accommodation, owing to the kindness of Mr. Hoseason, who had sent from his house at Lochend every refreshment I might need, together with a comfortable bed for the evening. Feideland is a place possessing no little interest; a remarkably busy scene is presented by the numerous crews sailing to the Haaf, or returning from it laden with fish;—some men are busily engaged in weighing the stock of ling, cod, and tusk, as it is brought in to the factors; others in spreading their lines on the rocks to dry, or in cooking victuals for their comrades who may be employed on the haddock grounds, or in brushing, slitting, and salting the fish that are brought to the door of the booth. But to the naturalist, Feideland presents attractions of no mean kind; the numerous rare marine productions that are continually drawn up by the lines of the fishermen, which a small perquisite might induce them to preserve and bring to the shore, would richly repay him for lingering several days in such a station.

I shall now take an opportunity of giving an account of the Ling Fishery, as it is prosecuted at the Haaf.

The Haaf is a name applied to any fishing-ground outside of the coast, where ling, cod, or tusk, may be caught. Not much above a century ago, the fishery for ling and cod was prosecuted much nearer shore than it is now, and fishing places, designated Raiths, were pointed out by certain landmarks called Meiths, so that every one knew his own raith, and any undue encroachment upon it was considered no less illegal and actionable, than if it had been upon a landed enclosure. The fishermen, however, at the present day, find it their interest to seek for ling at a much greater distance, even to the extent of thirty or forty miles. The men employed at the Haaf are from eighteen years of age and upwards. Six tenants join in a boat, their landlords importing for them frames ready modelled and cut out in

Norway, which, when put together, form a yawl of six oars, from eighteen to nineteen feet in keel, and six in beam; it is also furnished with a square sail. On the 25th of May, or on the 1st of June, the fishermen repair to their several stations. They either endeavour, with rod and line, to procure for bait the fry of the coalfish, of the age of twelve months, named pillocks, or they obtain at the ebb mussels and limpets; and then going out to sea, six miles or more, lay their lines for haddocks, and, after obtaining a sufficient supply of these fish, reserve them for bait.

The Feideland Haaf being thirty or forty miles from land, the fishermen endeavour to leave their station in the morning of one day, so as to be enabled to return in the course of the day following. And if, owing to boisterous weather, they have suffered long detention in their lodges, the first boat that is launched induces every weather-bound crew to imitate the example; it is, therefore, no unusual circumstance to see, in a fleet of yawls, all sails set, and all oars plied, nearly at the same instant of time. Each boat, in the first turn that it makes, observes the course of the sun, and then strives to be the first which shall arrive at the fishing station. Some few of the fishermen, during their voyage, superstitiously forbear to mention in any other name than one that is Norse, or in some arbitrary word of their own coinage, substituted for it, various objects, such, for instance, as a knife, a church, the clergyman, the devil, or a cat. When, after a tug of thirty or forty miles, the crew has arrived at the Haaf, they prepare to set their tows, which is the name they designate the lines by that are fitted with ling-hooks. Forty-five or fifty fathoms of tows constitute a buight, and each buight is fitted with from nine to fourteen hooks. It is usual to call twenty buights a packie, and the whole of the packies that a boat carries is a fleet of tows. Thus, while a boat in the south or east of Shetland carries only two or three packies, a fleet of tows used on the Feideland Haaf amounts to no less than six, these being baited with seldom less than 1200 hooks, provided with three buoys, and extending to a distance of from 5000 to 6000 fathoms.

The depth at which ling are fished for varies from fifty to 100 fathoms. In setting the tows, one man cuts the fish used for bait into pieces, two men bait and set the lines, and the remaining three or four row the boat. They sink at certain distances what they call cappie-stanes, the first that is let down being called the steech. These keep the tows properly fixed to the ground. When all this labor is finished, which, in moderate weather, requires three or four hours, and when the last buoy has floated, the fishermen rest for nearly two hours, and take their scanty sustenance; but it is lamentable to think that their poverty allows them nothing more than oatmeal bread, and a few gallons of water. Their severe labors have never yet excited the commiseration of the British government; for, owing to the excessive duty on spirits, they can rarely afford to carry with them the smallest supply of whisky. At length one man, by means of the buoy-rope, undertakes to haul up the tows,—another extricates the fish from the hooks, and throws them into a place in the stern named the shot,—a third

guts them and deposits their livers and heads in the middle of the boat. Along with the ling that is caught, there is a much less quantity of cod and of the gadus brosne or tusk; these are all valuable acquisitions. Six to ten wet lings are about a hundred weight, and hence six or seven score of fish are reckoned a decent haul,—fifteen or sixteen a very good one,—twenty scores of ling are rarely caught, but in such a case garbage, heads, and small fish, are all thrown overboard, nor can these lighten the boat so much as that she will not appear, according to the phrase of the fishermen, just lippering with the water. The skate and halibut which may be taken are reserved to supply the tables of the fishermen. That formidable looking fish the stone-biter (*Anarhichas lupus*) is also esteemed good eating. When all the tows are heaved up, they are deposited in the bow of the boat. If the weather be moderate, a crew does not need to be detained at the Feideland Haaf more than a day and a half. But too often a gale comes on,—the men are reluctant to cut their lines, and the most dreadful consequences ensue. About two years ago Mr. Watson, the respectable minister of Northmavine, communicated to the editor of an Edinburgh paper a striking instance of the misfortunes to which the fishermen are liable. In speaking of a number of boats that went off to the Haaf, he remarked that, ‘about the time they were laying their lines, it blew strong from the south-east, so that it was with much difficulty they could haul them in again. The storm increased and blew off land; two boats particularly were in great distress; they having lost their sails, and being quite worn out with fatigue, were able to do very little for their own safety. Luckily, the wind shifted to the westward, and on the third day the crews all reached land, completely exhausted with hunger and labor, having had nothing but a very little bread and some water. Two of the men, one in each of the boats which suffered most, died before they came to land, and the rest were not able to walk to their houses without assistance.’

*Account of the Isle of Stenness, the Holes of Scraada, and the Grind of the Navir.*—The Isle of Stenness, and the Skerry of Eshaness, appear at a short distance exposed to the uncontrolled fury of the Western Ocean. The isle presents a scene of unequalled desolation. In stormy winters huge blocks of stones are overturned, or are removed far from their native beds, and hurried up a slight acclivity to a distance almost incredible. In the winter of 1802 a tabular-shaped mass, eight feet two inches by seven feet, and five feet one inch thick, was dislodged from its bed, and removed to a distance of from eighty to ninety feet. I measured the recent bed from which a block had been carried away the preceding winter (A. D. 1818), and found it to be seventeen feet and a half by seven feet, and the depth two feet eight inches. The removed mass had been borne to a distance of thirty feet, when it was shivered into thirteen or more lesser fragments, some of which were carried still farther, from thirty to 120 feet. A block, nine feet two inches by six feet and a half, and four feet thick, was hurried up the acclivity to a distance of 150

feet. Such is the devastation that has taken place amidst this wreck of nature. Close to the Isle of Stenness is the Skerry of Eshaness, formidably rising from the sea, and showing on its westerly side a steep precipice, against which all the force of the Atlantic seems to have been expended: it affords a refuge for myriads of kittiwakes, whose shrill cries, mingling with the dashing of the waters, wildly accord with the terrific scene that is presented on every side.

The fishing station of Stenness is occupied by the tenants of Messrs. Cheyne, who, from the liberal manner in which they are treated, bear the character of being the best fishermen in the country. About seventy boats are annually employed at the Stenness Haaf. It is computed that between the middle of May and the 12th of August, when the ling fishery ceases, a boat makes about eighteen trips to the Haaf. Most of the ling, cod, and tusk that are cured in Northmavine go to Ireland; other markets are found for them by Scottish and English merchants, in Barcelona, Lisbon, Ancona, and Hamburg. The dangers that the boats run at the Haaf have often suggested the expediency of employing small decked vessels for the fishery. Accordingly, there was an undertaking of this kind set on foot about half a century ago, but it was in every respect ill managed, and failed.

Leaving Eshaness, where may be observed an immense block of granite, not less than three yards in diameter, thrown up by the sea, I pursued my way north, along a high gradually ascending ridge that impends the ocean, which is covered with the finest and softest sward that ever refreshed the tired feet of the traveller, being frequently resorted to by the inhabitants of Northmavine, on a fine Sabbath evening, as a sort of promenade. The verdure that embroiders this proud bank, on which numerous sheep continually feed, pleasingly harmonizes, on a calm day, with the glassy surface of the wide Atlantic; nor is the pleasure less perfect when the smooth coating of so luxuriant a green turf is contrasted with the naked red crags that form the precipice below, whitened with the spray of the breakers which continually dash against them with angry roaring. The rich surface of pasture that thus gradually shelves from the elevated ridge of the coast bears the name of the Villians of Ure;—and well might we apply to this favoured spot of Thule the compliment that has been often paid to some rich vale of England,—‘ Fairies joy in its soil.’ After a distance of three miles, this gladdening prospect of fertility is suddenly closed with the harsher features that Hialtland usually wears. Near the mountain lake of Houlland, where a burgh, built on a holm close to its shore, displays its mouldering walls, the coast resumes its wild aspect.

A large cavernous aperture, ninety feet wide, shows the commencement of two contiguous immense perforations, named the Holes of Scraada, where, in one of them that runs 250 feet into the land, the sea flows to its utmost extremity. Each has an opening at a distance from the ocean, by which the light of the sun is partially admitted. Farther north other ravages of the ocean are displayed. A mass of rock, the average

dimensions of which may perhaps be rated at twelve or thirteen feet square, and four and a half or five feet in thickness, was first moved from its bed, about fifty years ago, to a distance of thirty feet, and has since been twice turned over. But the most sublime scene is where a mural pile of porphyry, escaping the process of disintegration that is devastating the coast, appears to have been left as a sort of rampart against the inroads of the ocean;—the Atlantic, when provoked by wintry gales, batters against it with all the force of real artillery,—the waves having in their repeated assaults forced for themselves an entrance. This breach, named the Grind of the Navir, is widened every winter by the overwhelming surge, that, finding a passage through it, separates large stones from its side, and forces them to a distance of no less than 180 feet. In two or three spots the fragments which have been detached are brought together in immense heaps, that appear as an accumulation of cubical masses, the product of some quarry.

*Account of the Religious Paroxysms of the Shetlanders.*—The kirk was remarkably crowded, since there was a sermon to be preached incidental to the administration of the Sacrament; on which occasion I had an opportunity of seeing the convulsion fits to which the religious congregations of Shetland are subject. The introduction of this malady into the country is referred to a date of nearly a century ago, and is attributed to a woman who had been subject to regular paroxysms of epilepsy, one of which occurred during divine service. Among adult females, and children of the male sex, at the tender age of six, fits then became sympathetic. The patient complained, for a considerable time, of a palpitation of the heart; fainting ensued, and a motionless state lasted for more than a hour. But, in the course of time, this malady is said to have undergone a modification such as it exhibits at the present day. The female, whom it had attacked, would suddenly fall down, toss her arms about, writh her body into various shapes, move her head suddenly from side to side, and, with eyes fixed and staring, send forth the most dismal cries. If the fit had occurred on any occasion of public diversion, she would, as soon as it had ceased, mix with her companions, and continue her amusement as if nothing had happened. Paroxysms of this kind prevailed most during the warm months of summer; and, about fifty years ago, there was scarcely a Sabbath in which they did not occur. Strong passions of the mind, induced by religious enthusiasm, were also the exciting causes of these fits; but, like all such false tokens of divine workings, they were easily counteracted, by producing in patients such opposite states of mind, as arise from a sense of shame: thus they are under the control of any sensible preacher, who will administer to a mind diseased,—who will expose the folly of voluntarily yielding to a sympathy so easily resisted, or of inviting such attacks by affection. An intelligent and pious minister of Shetland informed me that, being considerably annoyed on his first introduction into the country by these paroxysms, whereby the devotions of the church were much impeded,

he obviated their repetition, by assuring his parishioners that no treatment was more effectual than immersion in cold water, and, as his kirk was fortunately contiguous to a fresh water lake, he gave notice that attendants should be at hand, during divine service, to ensure the proper means of cure. The sequel need scarcely be told. The fear of being carried out of the church and into the water, acted like a charm; not a single Naiad was made, and the worthy minister has, for many years, had reason to boast of one of the best regulated congregations in Shetland. When I attended the kirk of Baliasta, a female shrike, the indication of a convulsion-fit, was heard; the minister (Mr. Ingram of Fetlar) very properly stopped his discourse, until the disturber was removed; and, after advising all those who thought they might be similarly affected, to leave the church, he gave out in the mean time a psalm. The congregation was thus preserved from farther interruption; for, on leaving the kirk, I saw several females writhing and tossing about their arms on the green grass, who durst not, for fear of a censure from the pulpit, exhibit themselves after this manner within the sacred walls of the kirk.

*Account of the Teutonic fortress called the Burgh of Mousa.*—I passed along the shore of the open bay of Sandwick, which has been the grave of many seamen, who, by mistaking it for Bressay Harbour, have suffered all the horrors of shipwreck upon its exposed shores. In crossing a headland, to the east of the Inlet, a small low island, named Mousa, separated from the Mainland by a narrow strait, first rises to the view: this spot is little diversified with hill and dale; it contains one good house with out-buildings and cottages. But the most conspicuous object that lines its shores is the Burgh of Mousa, a circular building, which, if it did but taper towards its summit, would present no unapt similitude of a modern glass-house. This ancient fortress stands close to the water's edge; by crossing, therefore, in a boat, a narrow channel, little more than half a mile in breadth, we are landed immediately under its walls.

The Burgh of Mousa occupies a circular site of ground, somewhat more than fifty feet in diameter, being constructed of middle sized schistose stones of tolerably uniform magnitude, well laid together, without the intervention of any cement. This very simple round edifice attains the elevation of forty-two feet; it swells out, or bulges from its foundation, and draws smaller as it approaches the top, when it is again cast out from its lesser diameter; which singularity of construction is intended to obviate the possibility of scaling the walls. The door that leads to the open area contained within the structure is a small narrow passage, so low that an entrance is only to be accomplished by crawling upon the hands and knees; and, in creeping through it, the wall appears of the great thickness of fifteen feet, naturally leading to the suspicion of a vacuity within. On arriving at the open circular area included within this mural shell, I found the diameter of the space to be about twenty-one feet. On that part of the wall, within the court, which is nearly opposite to the entrance, the at-

tention is excited by a number of small apertures resembling the holes of a pigeon-house. There are three or four vertical rows of them, having each an unequal proportion of openings, varying from eight to eighteen in number. It was now evident that the mural shell of the structure was hollow, and that it contained chambers, to which these holes imparted a feeble supply of light and air. Beneath the whole, at little distance from the ground, there is a door that leads to a winding flight of stone steps, of the width of three feet, which communicates with all these apartments: I then discovered that the shell of the Burgh was composed of two concentric walls, each of about four feet and a half to five feet in breadth, and that a space of nearly a similar dimension was devoted to the construction of the inner apartments. In ascending these steps, which wound gradually to the top of the wall, I observed that they communicated at regular intervals with many chambers or galleries, one above another, that went round the building. These were severally of such a height that it was possible to walk within them nearly upright. The roof of the lowest chamber was the floor of the second, and after this manner seven tiers were raised. On reaching the highest step of the flight of stairs, there appeared no reason for supposing that any roof had ever protected the summit of the building, so that the Burgh of Mousa must have been originally nothing more than a circular mural shell, open to the top. The height of the inside wall was thirty-five feet, being seven feet less than that of the outside: this difference was partly owing to the accumulation of stones and earth, which had filled the inner court.

The mode was now evident in which this burgh had been intended to give security to the persons and property of the ancient inhabitants of Shetland against the sudden landing of predatory adventurers. The tiers of apartments contained within the thick walls would afford a shelter to women and children from the missile weapons of assaulters, besides being repositories for grain and other kinds of property, as well as for the stores whereby a long siege might be sustained. The low narrow door within the court, which admits of no entrance but in a creeping posture, might be easily secured at a short notice by large blocks of stone. It has been remarked of the rude forts, similar to these which occur on the shores of Scandinavia, that they were seldom taken by an enemy, unless by surprise, or after a long blockade; that frequently terraces and artificial banks were raised near that side of the wall which was the lowest; and that the besieged were then annoyed with arrows, stones, boiling water, or melted pitch, being thrown into the fort—offensive weapons which they did not neglect to return. The history of the Burgh of Mousa confirms the correctness of this observation; its high walls, bulging out from their foundation, defied any attempt to scale them; for, when they were encompassed by one of the earls of Orkney, he had no hopes of inducing the fortress to surrender but by cutting off all supplies of food, and then waiting the event of a long siege. Altogether the building was well adapted for resist-

ing the attacks of the ancient piratical hordes of these seas, who, from the short summers of northern latitudes, and from the incapability of their vessels to sustain a winter's navigation, durst not allow themselves to be detained on the coast by any tedious operations of assault.

Before quitting the Burgh of Mousa, I endeavoured to explore some of the chambers belonging to it, but owing to the ruined state of the floors the attempt was too hazardous. A lively historian has remarked that in Scandinavia such recesses were often devoted in days of yore to the security of young damsels of distinction, who were never safe while so many bold warriors were rambling up and down in quest of adventures. It is also surmised that galleries like these, which run winding around the walls, were, from the direction which they took, not unfrequently distinguished by the name of serpents or dragons; and hence the many allegorical romances that were coined concerning princesses of great beauty being guarded by such monsters. It is unlucky, however, for the historical interest of the dragon-fortress of Mousa, that within the dismal serpentine windings of its apartments was confined a damsel past her prime of life, and as well entitled to be ‘shrinéd for her brittleness’ as any of the frail heroines of antiquity. In the fourteenth century, when, by the rights of udal succession, there were joint earls of Orkney, dame Margareta, the widowed mother of one of them, listened to the lawless importunity of the gay Brunnius. Harold, her son, became impatient of the family disgrace, and banished from the islands his mother's paramour, as well as the illegitimate offspring that were the fruits of the connexion. But, in the course of a short time, dame Margareta's beauties attracted the notice of a more honorable suitor, who was no other than Harold's partner in the earldom of Orkney and Shetland. Erlend proffered love to the dame, which she returned; but as her son, from some cause, was averse to the nuptials, the parties entered into a tender engagement without his consent, and afterwards fled from his fury with al speed into Mousa. Then must Harold needs follow them, his hostile barks sailing in pursuit as fast as if all the winds of heaven had driven them; and then, anon, fled the dame Margareta and Erlend into the fort, within the dark recesses of which they nestled like two pigeons in a dove-cot. The burgh was beset with troops, but so impregnable was its construction that the assaulter found he had no chance of reducing it but by cutting off all supplies of food, and by this means waiting the result of a tedious siege. And now turn we to the gentle pair in the fortress, that we may speak of what pain they must there endure, what cold, what hunger, and what thirst. In such a dog-hole,—‘a conjurer's circle gives content above it;—a hawk's mew is a princely palace to it.’ But Harold had powerful foes in other places wherewith to contend, and, on this account, he gave heed to the advice of his followers, that Erlend should be retained as a friend and not as an enemy, and that he ought not to despise the new family alliance. A reconciliation took place, and then, with great joy, returned the parties to their several pursuits,

well satisfied with each other. Such is the story chronicled by Torfeus concerning the siege of Moseyaburgum and the loves of dame Margareta and Erlend her last leman.

*Method of bloodletting in Shetland.*—In Shetland there are several native popular medicines. Scurvy grass, for instance, is used in cutaneous complaints, butter-milk in dropsy, the shells of whelks calcined and pounded for dyspepsia, and a variety of steatite named in the country kleber for excoriations. But the mode of letting blood, known from time immemorial, deserves the most particular notice. When the native chirurgeon is called in, he first bathes the part from which the detraction is to be made with warm water, and then draws forth his cupping machine, which consists of nothing more than the upper part of a ram's horn, perforated at the top, and bound round with a soft piece of cotton or woollen rag. In applying it to the skin he sucks out a little of the included air, takes off the horn, makes upon the surface of the part that has thus been gently raised six or seven slight incisions, again fixes the cupping instrument, freely draws out the air by the re-application of his lips to it, and, either by insinuating his tongue within the perforation or by twisting round it a piece of leather or bladder, prevents the ingress of fresh air. He next uses coarse cloths, wrung out with warm water, to stimulate the flowing of the blood, and when the horn is half filled it leaves the skin and falls down. The same process is repeated several times, until a sufficient depletion has been made. It is worthy of remark that the African negroes, described by Park, have a similar mode of cupping.

**SHETLAND, NEW SOUTH**, a large tract of uninhabited land to the southward of cape Horn, discovered in 1819 by Mr. William Smith, the master of a British merchant brig, and which revived, in some quarters, the belief of a vast continent within the Antarctic circle. Mr. Smith gave to it the name of South Shetland, on account of its lying nearly in the same degree of south as the Shetland Isles of N. lat. It rather appears that the first discovery of it was made so long ago as the year 1599, by a Dutch navigator of the name of Gheritz. See our article *POLAR REGIONS*.

**SHETUCKET**, a river of Connecticut, formed by the junction of the Willomantic and Mount Hope rivers, and running into the Thames.

**SHEVAGUNGA**, a town of the Carnatic, south of India, and district of Little Marawar. The government had, according to the Nair custom, been from time immemorial in the hands of a female, styled the Ranny, till about the middle of the last century, when two brothers named Murdoo, of low birth, usurped the power, as rajahs. They were expelled by the nabob of Arcot, but afterwards, through bribery, restored. Again proving refractory, they were attacked by a British detachment, and defended themselves in the fortress of Callarcoil, five months. It was at length taken by storm, and the usurpers hanged. Of the old Shevagunga family there remained no lineal heir; the place was therefore given to a female, a relation of the late Ranny's, and the tribute continued at the former sum of

50,000 pagodas, value 8s 4d. each. Long. 78° 30' E., lat. 9° 54' N.

**SHEVAGUNGA**, a town of Hindostan, in the Mysore; twenty-five miles north-west of Bangalore, and thirty-three south-west of Chinna Balabaram.

**SHEVOCK**, a small river of Scotland, in Aberdeenshire, which joins the Gady near its conflux with the Ury.

**SHEW.** See *Show*.

**SHEW BREAD**, the loaves of bread which the priest of the week put every Sabbath day upon the golden table in the sanctuary before the Lord, in the temple of the Jews. They were twelve in number, and were offered to God in the name of the twelve tribes of Israel. They were shaped like a brick, were ten palms long and five broad, weighing about eight pounds each. They were unleavened, and made of fine flour by the Levites. The priests set them on the table in two rows, six in a row, and put frankincense upon them to preserve them from moulding. They were changed every Sabbath, and the old ones belonged to the priest upon duty. Of this bread none but the priests might eat, except in cases of necessity. It was called the bread of faces, because, the table of the show bread being almost over against the ark of the covenant, the loaves might be said to be set before the face of God. The original table was carried away to Babylon, but a new one was made for the second temple. It was of wood overlaid with gold. This, with the candlestick and some other spoils, was carried by Titus to Rome.

**SHIBBOLETH**, Heb. שִׁבְלֵת, i. e. an ear of corn. The word proposed by Jephtha to distinguish the Gileadites from the Ephraimites, as the latter pronounced sh like s. Hence it is still used metaphorically for the cant criterion, or distinguishing mark of a party.

**SHIEL**, Loch, a lake of Inverness-shire, in the parish of Ardnamurchan, ten miles long and two broad. It has a small island in it called Finan.

**SHIELD**, n. s. & v. a. Sax. *reylb*. A buckler; a broad piece of defensive armour held on the left arm to ward off blows: defence; a defender: to cover with a shield; to defend.

Out of their cold caves and frozen habitations, into the sweet soil of Europe, they brought with them their usual weeds, fit to shield the cold to which they had been inured.  
Spenser.

Were 't my fitness  
To let these hands obey my boiling blood,  
They're apt enough to dislocate and tear  
Thy flesh and bones: howe'er a woman's shape  
Doth shield thee.  
Shakespeare. King Lear.

My lord, I must treat the time alone.  
—God shield I should disturb devotion. Shakespeare.

Now put your shields before your hearts, and fight  
With hearts more proof than shields. Id. Coriolanus

His ponderous shield,  
Ethereal temper, massy, large, and round,  
Behind him cast; the broad circumference  
Hung on his shoulders like the moon. Milton.

The terror of the Trojan field,  
The Grecian honour, ornament, and shield,  
High on a pile the unconquered chief is placed.  
Dryden.

At Auxur's shield he drove, and at the blow  
Both shield and arm to ground together go.

*Id. Aeneid.*

Shouts of applause ran ringing through the field,  
To see the son the vanquished father shield. *Dryden.*

Hear one that comes to shield his injured honour,  
And guard his life with hazard of her own. *Smith.*

The SHIELD was an ancient weapon of defence, in form of a light buckler, borne on the arm to fend off lances, darts, &c. The form of the shield is represented by the escutcheon in coats of arms. The shield was that part of the ancient armour on which the persons of distinction in the field of battle always had their arms painted; and most of the words still used to express the space that holds the arms of families are derived from the Latin name for a shield, scutum. The French escu and escussion, and the English word escutcheon, or, as we commonly speak it, scutcheon, are evidently from this origin; and the Italian scudo signifies both the shield of arms and that used in war. The Latin name clypeus, for the same thing, seems also to be derived from the Greek word γλυφειν, to engrave; and it had this name from the several figures engraved on it as marks of distinction of the person who wore it. The shield in war, among the Greeks and Romans, was not only useful in the defence of the body, but it was also a token, or badge of honor, to the wearer; and he who returned from battle without it was always reckoned infamous. This honorable piece of armour has always been esteemed the properest place to engrave the signs of dignity of the possessor of it; and hence, when arms came to be painted for families, the heralds always chose to represent them upon a shield, but with several exterior additions and ornaments; as the helmet, supporters, and the rest. The form of the shield has not only been different in various nations, but even the people of the same nation, at different times, have varied its form greatly; and among several people there have been shields of several forms and sizes in use at the same period of time, and suited to different occasions. The most ancient and universal form of shields seems to have been the triangular. This we see instances of in all the monuments and gems of antiquity; our own most ancient monuments show it to have been the most antique shape with us, and the heralds have found it the most convenient, when they had any odd number of figures to represent; as if three, then two in the broad bottom part, and one in the narrow upper end, it held them very well; or, if five, they stood as conveniently, three below, and two above. The other form of a shield, now universally used, is square, rounded, and pointed at the bottom: this is taken from the figure of the Samnite shield used by the Romans, and since copied very generally by the English, French, and Germans. The Spaniards and Portuguese have the like general form of shields, but they are round at the bottom without the point; and the Germans, beside the Samnite shield, have two others, viz. 1. The bulging shield, distinguished by its bulging out at the flanks; and, 2. The indented shield, or shield chancree, which has a number of notches and indentings all round

its sides. The use of the ancient shield of this form was, that the notches served to rest the lance upon, that it might be firm while it gave the thrust; but, this form being less proper for the receiving armorial figures, the two former have been much more used in the heraldry of that nation. Beside this different form, we find the shields also often distinguished by their different positions, some standing erect, and others slanting various ways, and in different degrees; this the heralds express by the word pendant, i. e. hanging, they seeming to be hung up not by the centre, but by the right or left corner. The French call these ecu pendant, and the common antique triangular ones ecu ancien. The Italians call this scuto pendente; and the reason given for exhibiting the shield in these figures in heraldry is, that, in the ancient tilts and tournaments they who were to just at these military exercises were obliged to hang up their shields with their armories, or coats of arms on them, out at the windows and balconies of the houses near the place; or upon trees, pavilions, or the barriers of the ground, if the exercise was to be performed in the field. Those who were to fight on foot, according to Columbier, had their shields hung up by the right corner, and those who were to fight on horseback had their's hung up by the left. This position of the shields in heraldry is called couche by some writers, though by the generality pendant. It was frequent in all parts of Europe, in arms given between the eleventh and fourteenth centuries; but the hanging by the left corner, as it was the token of the owner's being to fight on horseback, so it was esteemed the most noble situation; and all the pendant shields of the sons of the royal family of Scotland and England, and of our nobility at that time, are thus hanging from the left corner. The hanging from this corner was a token of the owner's being of noble birth, and having fought in the tournaments before; but no sovereign ever had a shield pendant any way, but always erect, as they never formally entered the lists of the tournament. The Italians generally have their shields of arms of an oval form, in imitation of those of the popes and dignified clergy; but their herald, Petro Sancto, seems to regret the use of this figure of the shield, as an innovation brought in by the painters and engravers as most convenient for holding the figures, but derogatory to the honor of the possessor, as not representing either antiquity or honors won in war, but rather the honors of some citizen or person of learning. In Flanders, where this author lived, the round and oval shields are in the disrepute he speaks of; but in Italy, beside the popes and dignified prelates, many of the first families of the laity have them. The secular princes, in many other countries, also retain this form of the shield, as the most ancient and truly expressive of the Roman clypeus.

SHIELD, in heraldry, the escutcheon or field on which the bearings of coats of arms are placed. See HERALDRY.

SHIELD OF SCIPIO, a silver shield made by order of prince Allucius, and presented by him to Scipio Africanus the younger, as an acknowledgment, and in memory of the unparalleled

virtue and generosity he had experienced from that young Roman. Historians have unnecessarily enlarged on this part of Scipio's biography, by filling the mouths of all parties with the most pompous speeches. We give them no credit for their invention. We believe little was said, but much was felt by all parties, at this virtuous and happy meeting:—this triumph of generous sensibility over self-gratification. We give historians full credit, however, when they assure us that Allucius and the lady's parents had brought an immense sum of money to purchase her ransom. This being nobly refused by Scipio gave birth to the silver shield. Allucius, having no other means to express his gratitude, had a massy silver shield made, upon which the whole transaction was most elegantly and expressively engraved, and presented it to his generous benefactor. But Providence does not always favor even the most virtuous, but in the course of its mysterious events often tries their patience. This shield, which Scipio valued so highly and so justly, was lost with part of the baggage in crossing the Rhone. It lay in that river above 1800 years, till 1665, when some fishermen found it, and it was carried to Louis XIV.'s cabinet.

**SHIELDS, NORTH**, a township and sea-port in Tynemouth parish, Northumberland, eight miles east from Newcastle, and 232½ north by west from London, on the north side of the river Tyne. The inhabitants are largely employed in the exportation of coals, and the various trades connected with shipping. This extensive and populous town, a few years since, was little better than a dark alley, with a few dirty fishing huts; but wide and airy streets are now built in every direction. Overlooking the river, to the west, stands a range of neat buildings, called Millburn Place; and to the north Dockwray Square commands a fine prospect of the river and county to the south, the houses of which are equal to any in the metropolis; and many elegant detached mansions have recently been erected in the neighbourhood. The church, or chapel of ease, was erected in 1659. In the town are many chapels for dissenters, and a variety of institutions for pleasure, and also for charitable purposes. With the daily increasing population of the town, the trade also keeps pace, and may vie even with that of Newcastle, upwards of 400 vessels being annually laden at this port. Market on Wednesday.

**SHIELDS, SOUTH**, a market-town, and parish in Chester ward, Durham, situate on the south bank of the Tyne, opposite to North Shields. The inhabitants are chiefly employed in ship-building, and in the glass works, soap works, roperies, and various trades. This place, similarly to North Shields, enjoys all the advantages of trade and commerce, in common with Newcastle, particularly in the coal trade. A great number of trading vessels are built here. The town consists principally of one long, narrow, crooked street, nearly two miles in extent, about the centre of which is an open square, or market-place, enclosed in which is the town-hall. The church has lately been rebuilt at an expense of upwards of £5000. In this town are nume-

rous places of worship for dissenters. Petty sessions are held in the town-house, which is also used as an exchange. This town supports an unusual number of benefit societies, and charity schools. The number of vessels belonging to this port is upwards of 500. At this place was established the first laudable society for the saving of sailors from shipwreck. The church is a curacy. Markets on Wednesday and Saturday. Fairs, 24th of June, and 1st of September.

**SHIFT**, *v. n., v. a., &* { Saxon *cyptan*, of  
**SHIFT'ER**, *n. s.* } Gothic *skupta*, to  
**SHIFT'LESS**, *adj.* } change. To change place or appearance; practise some deceptive art for safety: change; alter; transfer from place to place; dress in fresh clothes: ‘to shift off’ is to defer; put away: a shift, an expedient; refuge; mean or last resource; fraud; evasion; a woman’s under linen: a shifter is one who plays shifts or tricks; shiftless, wanting expedients or means.

Pare saffron between the two St. Mary’s days  
Or set or go *shift* it that knowest the ways. *Tusser.*

She, redoubling her blows, drove the stranger to no other *shift* than to ward and go back; at that time seeming the image of innocence against violence. *Sidney.*

Of themselves, for the most part, they are so cautious and wily-headed, especially being men of so small experience and practice in law matters, that you would wonder whence they borrow such subtleties and sly *shifts*. *Spenser.*

The very custom of seeking so particular aid and relief at the hands of God, doth, by a secret contradiction, withdraw them from endeavouring to help themselves, even by those wicked *shifts*, which they know can never have his allowance whose assistance their prayers seek. *Hooker.*

I *shifted* him away,  
And laid good 'scuses on your ecstasy. *Shakespeare. Othello.*

As it were to ride day and night, and not to have patience to *shift* me. *Id. Henry IV.*

If I get down and do not break my limbs,  
I'll find a thousand *shifts* to get away. *Id. King John.*

All those schoolmen, though they were exceeding witty, yet better teach all their followers to *shift* than to resolve by their distinctions. *Raleigh.*

Neither use they their sails, nor place their oars in order upon the sides; but, carrying the oar loose, *shift* it hither and thither at pleasure. *Id.*

The wisdom of all these latter times, in princes’ affairs, is rather fine deliveries, and *shiftings* of dangers and mischiefs, when they are near, than solid and grounded courses to keep them aloof. *Bacon.*

To say, where the notions cannot fitly be reconciled, that there wanteth a term, is but a *shift* of ignorance. *Id.*

We cannot *shift*: being in we must go on. *Daniel.*

Know ye not Ulysses’ *shifts*?  
Their swords less danger carry than their gifts. *Denham.*

Not any beast of skill, but extreme *shift*,  
How to regain my sever'd company,  
Compelled me to awake the courteous echo,  
To give me answer from her mossy couch. *Milton.*

I was such a *shifter*, that, if truth were known,  
Death was half glad when he had got him down. *Id.*

Now *shift* your sails. *Dryden's Aeneid.*

**Slow to resolve, but in performance quick ;**  
So true, that he was awkward at a trick ;  
For little souls on little *shifts* rely. *Dryden.*

The most beautiful parts must be the most finished, the colours and words most chosen ; many things in both, which are not deserving of this care, must be *shifted off*, content with vulgar expressions. *Dryden's Dufresnoy.*

Men in distress will look to themselves, and leave their companions to *shift* as well as they can. *L'Estrange.*

Nature instructs every creature to *shift* for themselves in cases of danger. *Id.*

A fashionable hypocrisy shall be called good manners, so we make a *shift* somewhat to legitimate the abuse. *Id.*

If the ideas of our minds constantly change and *shift*, in a continual succession, it would be impossible for a man to think long of any one thing. *Locke.*

Struggle and contrive as you will, and lay your taxes as you please, the traders will *shift it off* from their own gain. *Id.*

Here you see your commission ; this is your duty, these are your discouragements : never seek for *shifts* and evasions from worldly afflictions : this is your reward, if you perform it ; this your doom if you decline it. *South.*

Those little animals provide themselves with wheat ; but they can make *shift* without it. *Addison.*

Vegetables being fixed to the same place, and so not able to *shift* and seek out after proper matter for their increment, it was necessary that it should be brought to them. *Woodward.*

By various illusions of the devil they are prevailed on to *shift off* the duties, and neglect the conditions, on which salvation is promised. *Rogers's Sermons.*

For the poor *shiftless* irrational, it is a prodigious act of the great Creator's indulgence, that they are all ready furnished with such clothing. *Derham's Physico Theology.*

Since we desire no recompense nor thanks, we ought to be dismissed, and have leave to *shift* for ourselves. *Swift.*

Come, assist me, muse obedient,  
Let us try some new expedient ;

*Shift* the scene for half an hour,

Time and place are in thy power. *Id.*

This perfect artifice and accuracy might have been omitted, and yet they have made *shift* to move up and down in the water. *More's Antidote against Atheism.*

She begs you just would turn you while she *shifts*. *Young.*

Our herbals are sufficiently stored with plants, and we have made a tolerable *shift* to reduce them to classes. *Baker.*

Then *shifting* his side (as a lawyer knows how), He pleaded again in behalf of the Eyes :

But what were his arguments few people know, For the court did not think they were equally wise. *Couper.*

**SIFTERS**, on board a man of war, are certain men who are employed by the cooks to shift and change the water in which the flesh or fish is put, and laid for some time, in order to fit it for the kettle.

**SHIFTING OF PLANTS**, in horticulture, the business of removing plants from smaller pots to larger ones, &c., to give them fresh earth or mould. It is necessary occasionally, in all plants in pots, to assist them with larger ones, accord-

ing as the advanced growth of the particular sorts proceed ; and at the same time to supply an additional proportion of fresh earth about the root-fibres of the plants, to promote their growth ; and sometimes, for the application of fresh compost, either in part or wholly.

Some sorts, of a strong free growth, require shifting once every year or two : others, more moderate growers, or of more settled growths, once in two or three years ; and some large growing kinds, that are advanced to a considerable size, having been occasionally shifted, in their increasing growth, from smaller into larger pots of different proportionable sizes, and some from large pots into tubs of still larger dimensions, as large plants of the American aloe, orange, and lemon-tree kinds, &c. In that advanced state, they sometimes only need occasional shifting once in three or several years, especially when the pots or tubs are capacious, containing a large supply of earth, and are occasionally refreshed with some new compost at top, and a little way down, round the sides about the extreme roots : and in some small slow-growing plants, as in many of the succulent tribe, shifting them once in two or three years may be sufficient ; other sorts want shifting annually into larger pots, according as they advance in a free growth, as the hardy and tender kinds of herbaceous and shrubby plants, &c. Some of the tender annual flower-plants, cultivated in pots, and forwarded in hot-beds, being planted first in small pots, want shifting, in their increasing growth, into larger sizes, once or twice the same season, as from April to the beginning of June, when, being shifted finally into the requisite full-sized pots, they remain during their existence. But though large grown plants, either of the shrub or tree kind, as well as other plants of large growths, after being finally stationed in the fullest-sized large pots and tubs, succeed several years without shifting, they should in the interval have the top earth loosened, and down round the sides to some little depth, removing the loosened old soil, and filling up the pots, tubs, &c., with fresh earth, settling it close by a moderate watering.

The season for occasional shifting plants is principally the spring and autumn, as from March to May for the spring shifting ; and from August to the end of September for the autumn ; though, in plants that can be removed with the full balls of earth about the roots, it may be occasionally performed almost at any time ; however, for any general shifting, the spring and autumn are the most successful seasons, as the plants then sooner strike fresh root ; and many sorts preferably in the spring, by having the benefit of the same growing season, and that of summer. In performing the business, it is mostly proper to remove the plants from the smaller to the larger pots, with the balls of earth about the roots, either wholly, or some of the outward old earth, the dry or matted radical fibres only being carefully trimmed away, so as not to disturb the principal roots in the bodies of them, as by this means the plants receive but little check in their growth by the removal. Sometimes, when any particular plants, shrubs,

or trees, &c., in their pots, discover by their tops that they are in a declining state, as probably the defect may be either in the root, or the old balls of earth, it may be proper to shake all the earth entirely away, in order to examine the roots, and to trim and dress them as the case may require, replanting them in entire fresh compost or mould.

In preparing for this work, where necessary to give larger pots, &c., it is proper to provide them of suitable sizes, in some regular gradation larger than the old ones, according to the nature and growth of the plants, the whole being placed ready, with a proper quantity of fresh compost earth, in proportion to the number and size of the plants intended to be shifted: then let those plants intended to be removed with balls or taken out of their old pots separately, with the whole balls or clumps of earth about the roots as entire as possible; and when large, or tolerably full, with a knife trim off some of the outward loosest earth, and the extreme fibres of the roots; but when small, and adhering together compactly, the whole may be preserved entire; and in either case, where there are very matted, dry, or decayed fibres surrounding the balls, they should be trimmed as it may seem necessary: in those of a fresh lively growth, the loose straggling parts only should be cut away. The requisite pruning, trimming, or dressing in the heads or tops, should also be given where it may seem proper, according to the state of growth, and the natural habit of the different plants; but many sorts require little or none of this sort of attention. Then having placed some pieces of tile or oyster shell, &c., loosely over the holes at bottom, and laid in a little fresh earth, two, three, or four inches deep, or more, according to the size of the pot, the plant should be set in with its ball of earth, as above, filling up around it with more fresh mould, raising it an inch or two over the top of the ball; and giving directly a moderate watering, to settle the earth close about the ball and roots regularly in every part, in a proper manner: in such cases, where the ball in particular plants appears very compactly hard and binding, it may be proper to loosen it a little, by thrusting a sharp pointed stick down into the earth into different parts, giving it a gentle wrench, to open the earth moderately; or sometimes it may also be proper to trim away some of the old earth on the top and sides, then planting it as above, and filling up round and over the ball with fresh earth, and watering it afterwards. Also, in shifting hardy or tender, shrubby, succulent, or herbaceous plants, when any appear of a sickly, weak, or unhealthy growth, it may be adviseable to clear off a considerable part of the outward old earth from the balls about the roots, or, in some cases, to shake it wholly away, that the defects in the growths, occasioned either by faults in the roots or in the earth, may be removed by pruning out any decayed or bad parts of the roots, and replanting them wholly in fresh earth. After shifting a moderate watering will of course be required.

**SHIFTING A TACKLE**, in sea-language, the act of removing the blocks of a tackle to a greater distance from each other, on the object

to which they are applied, in order to give a greater scope of extent to their purchase. This operation is otherwise called fleeting. Shifting the helm denotes the alteration of its position, by pushing it towards the opposite side of the ship. Shifting the royal signifies changing its position on the capstan, from the right to the left, and vice versa.

**SHIGGAION**, in ancient Hebrew music, is either the name of a musical instrument, or of a tune whose notes were very much diversified. Psal. vii. title.

**SHIITES**, a religious sect, or rather a religious political party among the Mahometans, which originated on the death of Mahomet, from the rejection of his son-in-law Ali, and which still divides all his followers in Turkey, Arabia, and Persia. If Christians may presume to decide in a Mahometan controversy, we would say the Shiites have justice on their side. Their opponents are called Sonnites.

The name Shiites properly signifies sectaries or adherents in general, but is peculiarly used to denote those of Ali Ebn Abi Tâleb; who maintain him to be lawful caliph and imam, and that the supreme authority, both in spirituals and temporals, of right belongs to his descendants. The principal sects of the Shiites are five, which are subdivided into an almost incredible number; so that some understand Mahomet's prophecy of the seventy odd sects, of the Shiites only. Their general opinions are, 1. That the peculiar designation of the imam, and the testimonies of the koran and Mahomet concerning him, are necessary points. 2. That the imams ought necessarily to keep themselves free from light sins as well as more grievous. 3. That every one ought publicly to declare who it is that he adheres to, and from whom he separates himself, by word, deed, and engagement, and that herein there should be no dissimulation. But in this last point some of the Zeidians, a sect so named from Zeid, the son of Ali, surnamed Zein al Abedin, and great grandson of Ali, dissented from the rest of the Shiites. As to other articles, wherein they agreed not, some of them came pretty near to the notions of the Motazalites, others to those of the Moshabbites, and others to those of the Sonnites. Among the latter of these, Mahommed al Baker, another son of Zein al Abedin's, seems to claim a place: for his opinion as to the will of God was, that God willetteth something in us, and something from us, and that he willetteth from us he has revealed to us; for which reason he thought it preposterous that we should employ our thoughts about those things which God willetteth in us, and neglect those which he willetteth from us: and, as to God's decree, he held that the way lay in the middle, and that there was neither compulsion nor free liberty. A tenet of the Khattabians, or disciples of one Abu'l Khattâb, is too peculiar to be omitted. These maintained paradise to be no other than the pleasures of this world, and hell-fire to be the pains thereof, and that the world will never decay: which proposition being first laid down, it is no wonder they went farther, and declared it lawful to indulge themselves in drinking wine and whoring, and

to do other things forbidden by the law, and also to omit doing the things commanded by the law. Many of the Shiites have carried their veneration for Ali and his descendants so far that they transgressed all bounds of reason and decency; though some of them are less extravagant than others. The Gholaites, who had their name from their excessive zeal for their imams, were so highly transported therewith that they raised them above the degree of created beings, and attributed divine properties to them; transgressing on either hand, by deifying of mortal men, and by making God corporeal: for one while they liken one of their imams to God, and another while they liken God to a creature. The sects of these are various, and have various appellations in different countries. Abd'allah Ebn Saba (who had been a Jew, and had asserted the same thing of Joshua the son of Nun), was the ringleader of one of them. This man gave the following salutation to Ali, viz. Thou art Thou, i. e. thou art God: and hereupon the Gholaites became divided into several species; some maintaining the same thing, or something like it, of Ali, and others of some of one of his descendants; affirming that he was not dead, but would return again in the clouds, and fill the earth with justice. But, how much soever they disagreed in other things, they unanimously held a metempsychosis, and what they call al Holul, or the descent of God on his creatures; meaning thereby that God is present in every place, and speaks with every tongue, and appears in some individual persons; and hence some of them asserted their imams to be prophets, and at length gods. The Nosairians and the Ishakians taught that spiritual substances appear in grosser bodies; and that the angels and the devil have appeared in this manner. They also assert that God has appeared in the form of certain men; and since, after Mahomet, there has been no man more excellent than Ali, and, after him, his sons have excelled all other men, that God has appeared in their form, spoken with their tongue, and made use of their hands, for which reason, say they, we attribute divinity to them. And, to support these blasphemies, they tell several miraculous things of Ali, as his moving the gates of Khaibar, which they urge as a plain proof that he was endued with a particle of divinity, and with sovereign power, and that he was the person in whose form God appeared, with whose hands he created all things, and with whose tongue he published his commands; and therefore they say he was in being before the creation of heaven and earth. In so impious a manner do they seem to wrest those things which are said in Scripture of Christ, by applying them to Ali. These extravagant fancies of the Shiites, however, in making their imams partakers of the divine nature, and the impiety of some of those imams in laying claim thereto, are so far from being peculiar to this sect, that most of the other Mahometan sects are tainted with the same madness; there being many found among them, and among the Susis especially, who pretend to be nearly related to heaven, and who boast of strange revelations before the credulous people. To this account of the Shiites

of the first ages we shall subjoin a brief mention of the great schism at this day subsisting between the Sonnites and the Shiites, or partisans of Ali, and maintained on either side with implacable hatred and furious zeal. Though the difference arose at first on a political occasion, it has, notwithstanding, been so well improved by additional circumstances, and the spirit of contradiction, that each party detest and anathematise the other as abominable heretics, and farther from the truth than either the Christians or the Jews. The chief points wherein they differ are, 1. That the Shiites reject Abu Beir, Omar, and Othman, the three first caliphs, as usurpers and intruders; whereas the Sonnites acknowledge and respect them as rightful imams. 2. The Shiites prefer Ali to Mahomet, or at least esteem them both equal; but the Sonnites admit neither Ali, nor any of the prophets, to be equal to Mahomet. 3. The Sonnites charge the Shiites with corrupting the koran, and neglecting its precepts; and the Shiites retort the same charge on the Sonnites. 4. The Sonnites receive the Sonna, or book of traditions of their prophet, as of canonical authority; whereas the Shiites reject it as apocryphal and unworthy of credit. And to these disputes, and some others of less moment, is principally owing the antipathy which has long reigned between the Turks, who are Sonnites, and the Persians, who are of the sect of Ali.—Sale's Koran, Introduction.

**SHILLER SPAR**, in mineralogy, a species of hornblende. See MINERALOGY.

**SHILLING**, n. s. Saxon and Erse scylling, Belg. schelling. A coin of various value in different times. It is now twelve pence.

Five of these pence made their shilling, which they called scilling, probably from *scillius*, which the Romans used for the fourth part of an ounce; and forty-eight of these scillings made their pound; and four hundred of these pounds were a legacy for a king's daughter, as appeareth by the last will of king Alfred.

*Camer's Remains.*

The very same shilling may at one time pay twenty men in twenty days, and at another rest in the same hands one hundred days. *Locke.*

Who, with much pains exerting all his sense,  
Can range aright his shillings, pounds, and pence.  
*Young.*

**SHILLING**, an English silver coin, equal to the twentieth part of a pound. Freherus derives the Saxon scilling, whence our shilling, from a corruption of *siliqua*; proving the derivation by several texts of law, and, among others, by the twenty-sixth law, *De annuis legislativis*. Skinner deduces it from the Saxon scild, shield, by reason of the escutcheon of arms thereon. Bishop Hooper derives it from the Arabic *scheele*, signifying a weight; but others, with greater probability, deduce it from the Latin *sicilicus*, which signified a quarter of an ounce, or the forty-eighth part of a Roman pound. In confirmation of this etymology it is alleged that the shilling kept its original signification, and bore the same proportion to the Saxon pound as *sicilicus* did to the Roman and the Greek, being exactly the forty-eighth part of the Saxon pound; a discovery which we owe to Mr. Lambarde. (Explic. Rer. et Verb. Sax. voc. *Libra*).

However, the Saxon laws reckon the pound in the round number at fifty shillings, but they really coined out of it only forty-eight; the value of the shilling was five-pence; but it was reduced to four-pence above a century before the conquest; for several of the Saxon laws, made in Athelstan's reign, oblige us to take this estimate. Thus it continued to the Norman times, as one of the conqueror's laws sufficiently ascertains; and it seems to have been the common coin by which the English payments were adjusted. After the conquest the French solidus of twelve pence, which was in use among the Normans, was called by the English name of shilling; and the Saxon shilling of fourpence took a Norman name, and was called the groat, or great coin, because it was the largest English coin then known in England. It has been the opinion of the bishops Fleetwood and Gibson, and of the antiquaries in general, that, though the method of reckoning by pounds, marks, and shillings, as well as by pence and farthings, had been in constant use even from the Saxon times, long before the Norman conquest, there never was such a coin in England as either a pound or a mark, nor any shilling, till the year 1504 or 1505, when a few silver shillings or twelve-pences were coined, which have long since been solely confined to the cabinets of collectors. Mr. Clarke combats this opinion, alleging that some coins mentioned by Mr. Folkes, under Edward I., were probably Saxon shillings new minted, and that archbishop Aelfric expressly says (Gram. Saxon. p. 52) that the Saxons had three names for their money, viz. mancuses, shillings, and pennies. He also urges the different value of the Saxon shilling at different times, and its uniform proportion to the pound, as an argument that their shilling was a coin; and the testimony of the Saxon gospels, in which the word we have translated pieces of silver is rendered shillings, which, he says, they would hardly have done, if there had been no such coin as a shilling then in use. Accordingly the Saxons expressed their shilling in Latin by *silius* and *argenteus*. He farther adds that the Saxon shilling was never expressed by solidus till after the Norman settlements in England; and, howsoever it altered during the long period that elapsed from the conquest to the time of Henry VII., it was the most constant denomination of money in all payments, though it was then only a species of account, or the twentieth part of the pound sterling: and when it was again revived as a coin, it lessened gradually as the pound sterling lessened, from the twenty-eighth of Edward III. to the forty-third of Elizabeth. In 1560 there was a peculiar sort of shilling struck in Ireland, of the value of ninepence English, which passed in Ireland for the value of twelvepence. The motto on the reverse was *posui Deum adjutorem meum*. Of these shillings, according to Malynes, eighty-two went to the pound; they therefore weighed twenty grains one-fourth each, which is somewhat heavier in proportion than the English shilling of that time, sixty-two whereof went to the pound, each weighing ninety-two grains seven-eighths; and the Irish shilling being valued at the tower at ninepence English, that is, one-fourth

part less than the English shilling, it should therefore proportionably weigh one-fourth part less, and its full weight be somewhat more than sixty-two grains; but some of them found at this time, though much worn, weighed sixty-nine grains. In 1598 five different pieces of money of this kind were struck in England for the service of the kingdom of Ireland at twelvepence each; half shillings to be current at sixpence, and quarter shillings at threepence. Pennies and halfpennies were also struck of the same kind, and sent over for the payment of the army in Ireland. The money thus coined was of a very base mixture of copper and silver; and two years after there were more pieces of the same kind struck for the same service, which were still worse; the former being three ounces of silver to nine ounces of copper; and these latter only two ounces eighteen pennyweights to nine ounces two pennyweights of the alloy. The Dutch, Flemish, and Germans have likewise their shilling, called *schelin*, *schilling*, *scalin*, &c., but these, not being of the same weight or fineness with the English shilling, are not current at the same value. The English shilling is worth about twenty-three French sols; those of Holland and Germany about eleven sols and a half; those of Flanders about nine. The Dutch shillings are also called *sols de gros*, because equal to twelve gros. The Danes have copper shillings worth about one-fourth of a farthing sterling.

**SHILL-I-SHALL-I.** A corrupt reduplication of 'shall I?' The question of a man hesitating. To stand *shill-I-shall-I* is to continue hesitating and procrastinating.

I am somewhat dainty in making a resolution, because, when I make it, I keep it: I don't stand *shill-I-shall-I* then: if I say 't, I'll do 't.

*Congreve's Way of the World.*

**SHILLUK**, a town of Africa, on the banks of the Bahr el Abiad, or true Nile. The houses are built of clay, and the inhabitants are idolaters, have no other clothing than bands of long grass, which they pass round the waist and between the thighs. They are all black; both sexes are accustomed to shave their heads. The people of Shilluk have the dominion of the river, and take toll of all passengers, in such articles of traffic as pass among them. They are hospitable to such as come among them in a peaceable manner, and never betray those to whom they have once accorded protection Long. 32° 26' E., lat. 130° 0' N.

**SHILOH**, a term much disputed among interpreters and commentators upon Scripture. In Gen. xl ix. 10 it denotes the Messiah. The patriarch Jacob foretels his coming in these words: 'the sceptre shall not depart from Judah, nor a lawgiver from between his feet, until Shiloh come: and unto him shall the gathering of the people be.' The Hebrew text reads שְׁלֹה יִכָּא בֵּין־עֲמֹדֶן until Shiloh come. All Christian commentators agree that this word ought to be understood of the Messiah, or Jesus Christ; but all are not agreed about its literal and grammatical signification. St. Jerome, who translates it by *Qui mittendus est*, manifestly reads Shiloach, sent, instead of Shiloh. *Septuagint* have it

*Εως αν ελθη τα απιοκεμενα αυτω; or, Εως αν ελθη 'ω αποκειται* (as if they had read לְשׁ instead of לְשָׁלֹחַ), i. e. ‘Until the coming of him for whom it is reserved;’ or, ‘till we see arrive that which is reserved for him.’ Some translate, ‘the sceptre shall not depart from Judah till he comes to whom it belongs;’ שֵׁלֶת or שִׁלְתָּה instead of שְׁלֹחַ. Others, ‘till the coming of the peace-maker;’ or, ‘the pacific;’ or, ‘of prosperity,’ שְׁלֹחַ prosperatus est. Shalah signifies ‘to be in peace, to be in prosperity;’ others, ‘till the birth of him who shall be born of a woman that shall conceive without the knowledge of a man,’ שְׁוֹל or אֲשִׁיל, secundina, fluxus. Le Clerc explains it, ‘the sceptre shall not depart from Judah, till its end, its ruin; till the downfall of the kingdom of the Jews,’ לְאֵשׁ or לְלֹהֶל it has ceased, it has finished. But this explains nothing. It is only saying, the sceptre shall not depart till it depart! A more modern author derives Shiloh from שְׁלֹחַ, fatigare, which sometimes signifies to be weary, to suffer; ‘till his labors, his sufferings, his passion, shall happen. But, whatever be the precise grammatical signification of Shiloh, it is sufficient for us to show that the ancient Jews are in this matter agreed with the Christians; they acknowledge that this word stands for the Messiah, the King. It is thus that the paraphrasts Onkelos and Jonathan, that the ancient Hebrew commentaries upon Genesis, and that the Talmudists themselves explain it. If Jesus Christ and his apostles did not make use of this passage to prove the coming of the Messiah, it was because then the completion of this prophecy was not sufficiently manifest. The sceptre still continued among the Jews; they seemed to have still kings of their own nation, though the royal family was extirpated by Herod; but soon after the sceptre was entirely taken away from them, and has never been restored to them since. But that Jacob’s prophecy was literally fulfilled is clear from the whole history of the Jews. Nothing is more evident than that the posterity of Judah preserved their distinct existence as a tribe, or rather as a nation, together with a power of government and legislation, even when they were occasionally subject to other nations, till Jesus Christ was born into the world. The tribe of Judah was the most numerous of the twelve when they came out of Egypt: under Moses they led the van in the wilderness: after leaving it they were divinely ordered to make the first attack on the remaining Canaanites (*Judges*, i. 1, 2), as well as afterwards against the Benjamites (*xx. 18*). Caleb, and his son-in-law Othniel, the first judge of Israel after Joshua, were of this tribe: and, from the death of Saul, the royal house of David held the supreme power till the Babylonish captivity. Even under the Chaldeans, Medes and Persians, Jeconiah, Zerubbabel, and Nehemiah, who were all of this tribe, held an evident superiority over the Jews. (See *2 Kings xxv. Ezra, i.—vi. Neh. i.—xiii.*) And for a period of about 450 years, from the death of Zerubbabel to the usurpation of Herod, the government of Judah continued in the descen-

dants of Zerubbabel, and afterwards in the Asmonean, or Maccabean family; till the usurpation of Herod the Ascalonite or Idumean, a few years before the birth of our Saviour, showed that the completion of the prophecy by the coming of Shiloh, and the departure of the sceptre from Judah, was about to take place. See HEROD, and the chronological series of the princes of Judah, under JUDAH. The total conquest and dispersion of the Jews soon after, and the dreadful destruction of Jerusalem by the Romans, completely fulfilled the prophecies of Jacob and our Saviour. See JEWS.

SHILOH, in ancient geography, a celebrated city of Israel, in the tribe of Ephraim, about ten miles south of Shechem, and twenty-five north of Jerusalem. In this city Joshua divided the Western Canaan among the nine tribes and a half (*Josh. xviii.*); and here he fixed the Tabernacle of God; where it remained for about 350 years, till it was taken by the Philistines, little to their advantage. Here too the remaining 200 Benjamites provided themselves with wives at the vintage festival (*Judges xxi. 23.*); as the Romans afterwards did with the Sabine virgins.

SHIM, in agriculture, a tool of the tillage kind, used in breaking down and reducing the more stiff and heavy sorts of land, as well as cutting up and clearing them from weeds. In the Hertford Agricultural Survey by the Board of Agriculture, the writer remarks that a tool of this kind is in use by Mr. Calvert, which differs from those usually employed, in which the cutting-iron or plate, which for the work it is adapted for, as that of cutting up weeds on two-bout or four-furrow Essex ridges, or of cleaning land without ploughing or burying the soil, is a small segment of a large circle. It despatches a ridge at a time, and is an implement that performs its business well, and which deserves the notice of the tillage-farmer in other places. It is readily altered for flat work, and is said to be had recourse to by other farmers with success in the same district. A useful tool of this sort has also been recommended by Mr. Young, in his Annals, the hint of which he took from the Berkshire one, and to which the beam and block is capable of being applied. In a wide interval, the three shares may be worked on a level. Between the rows of cabbages, after earthing up, the two external shares may be set to cut the weeds that are apt to rise on the sides of the ridges, without disturbing too much earth, and the centre share sunk to scrape the bottom of the furrow. The centre one may also be worked alone, between narrow rows. In forging the shares of all shims, he has well observed that the blacksmith should be careful to give them tendency enough into the ground, by bending them downwards: for want of this caution, he has found many of them to work badly. The wheel in the beam counteracts this tendency sufficiently when at work. These tools should be upon all tillage farms.

SHIM, POTATOE, a tool of the shim kind, used for cleaning the potatoe crops.

SHIN, n. s. Saxon *scina*; Teut. *schien*. The forepart of the leg.

I bruised my *shin* the other day with playing at sword and dagger.

*Shakspeare. Merry Wives of Windsor.*

The *shin* bone, from the knee to the instep, is made by shadowing one half of the leg with a single shadow.

*Peacham.*

His leg then broke,

Had got a deputy of oak;

For when a *shin* in fight is cropt,

The knee with one of timber's prop. *Hudibras.*

As when to an house we come,

To know if any one's at home,

We knock; so one must kick your *shin*,

Ere he can find your soul's within.

*Anonymous.*

SHINAR, a province of Babylonia, where the famous tower of Babel was built. See BABEL. It had mountains named Zagræi, and a city and river named Singara. Ashur the son of Shem emigrated out of it.

SHINE, v. n. & n. s. { *Pret.* I shone, I have shined, I have shined. *Sax. scinan; Belg. schijnen.*

To have bright resplendence; to glitter; glister; gleam; fair weather: the adjective corresponding.

They are waxes fat, they *shine*. *Jer. v. 28.*

The Lord make his face *shine* upon thee, and be gracious.

*Numbers vi. 25.*

The light of righteousness hath not shined unto us, and the sun of righteousness rose not upon us.

*Wisdom v. 6.*

So proud she shined in her princely state, Looking to heaven, for earth she did disdain, And sitting high. *Faerie Queene.*

When Aldeboran was mounted high, Above the *shiny* Cassiopeia's chair, One knocked at the door, and in would fare. *Id.*

To-day the French, All clinquant, all in gold, like heathen gods, *Shone* down the English; and to-morrow Made Britain India: every man that stood Shewed like a mine. *Shakspeare*

The moon *shines* bright: in such a night as this, When the sweet wind did gently kiss the trees, And they did make no noise.

*Id. Merchant of Venice.*

How bright and goodly *shites* the moon! —The moon! the sun: it is not moonlight now.

*Shakespeare.*

The night Is *shiny*, and they say we shall embattle By th' second hour o' th' morn.

*Id. Antony and Cleopatra.*

Clear pools greatly comfort the eyes, when the sun is overcast, or when the moon *shineth*. *Bacon.*

He that has injured his eyes to that divine splendour which results from the beauty of holiness is not dazzled with the glittering *shine* of gold, and considers it as a vein of the same earth he treads on.

*Decay of Piety.*

Fair daughter, blow away these mists and clouds, And let thy eyes *shine* forth in their full lustre.

*Denham.*

True paradise inclosed with *shining* rock. *Milton.* We can dismiss thee ere the morning *shine*. *Id.*

Fish with their fins and *shining* scales. *Id.*

Her face was veiled; yet to my fancied sight Love, sweetness, goodness, in her person *shined*

So clear, as in no face with more delight. *Id.*

Celestial light

*Shine* inward, and the mind through all her powers Irradiate. *Id.*

Be it fair or foul, or rain or *shine*. *Dryden.*

While from afar we heard the cannons play, Like distant thunder on a *shiny* day,

For absent friends we were ashamed to fear. *Id.*

The sun *shines* when he sees it. *Locke.*

The colour and *shining* of bodies is nothing but the different arrangement and refraction of their minute parts.

*Id.*

Cato's soul

*Shines* out in every thing she acts or speaks;

While winning mildness and attractive smiles

Dwell in her looks, and with becoming grace

Softens the rigour of her father's virtues. *Addison.*

The reformation, in its first establishment, produced its proper fruits, and distinguished the whole age with *shining* instances of virtue and morality.

*Id. Freeholder.*

Of all the' enamelled race, whose silvery wing Waves to the tepid zephyrs of the spring,

Or swims along the fluid atmosphere,

Once brightest *shined* this child of heat and air.

*Pope.*

Say, in what mortal soil thou deignest to grow? Fair opening to some court's propitious *shine*,

Or deep with diamonds in the flaming mine? *Id.*

Few are qualified to *shine* in company; but it is in most men's power to be agreeable. *Swift.*

SHINNESS, n. s. From SHY. Unwillingness to be tractable or familiar.

An incurable *shiness* is the vice of Irish horses, and is hardly ever seen in Flanders, because the winter forces the breeders there to house and handle their colts.

*Temple.*

They were famous for their justice in commerce, but extreme *shiness* to strangers: they exposed their goods with the price marked upon them, and then retired.

*Arbuthnot.*

SHIN'GLE, n. s. Teut. *schindel.* A thin board to cover houses.

The best to cleave is the most useful for pales, laths, *shingles*, and wainscot.

*Mortimer's Husbandry.*

SHINGLES, in building, are small pieces of wood, or quartered oaken boards, sawn to a certain scantling, or, as is more usual, cleft to about an inch thick at one end, and made like wedges, four or five inches broad, and eight or nine long. They are used instead of tiles or slates, especially for churches and steeples; however, this covering is dear; yet, where tiles are very scarce, and a light covering is required, it is preferable to thatch; and, where they are made of good oak, cleft, and not sawed, and well seasoned in water and the sun, they make a sure, light, and durable covering. The building is first to be covered all over with boards, and the shingles nailed upon them.

SHIP, n. s. & v. a.

*Sax. scip; Belg.*

SHIP'BOARD,

*schip.* A large hol-

SHIP'BOY,

low vessel made to

SHIP'MAN,

pass on or over the

SHIP'MASTER,

seas: to put into a

SHIP'PING,

ship: the deriva-

SHIP'WRECK, n. s. & v. n.

tives correspond-

SHIP'WRIGHT, n. s.

ing.

Hiram sent in the navy *shipmen* that had known of the sea.

*1 Kings ix. 27.*

They have made all thy *shipboards* of fir-trees, and brought cedars from Lebanon to make masts.

*Ezek. xxvii. 5.*

The *shipmaster* came to him, and said unto him, What meanest thou, O sleeper? arise, call upon thy God

*Jonah i. 6.*

They took *shipping* and came to Capernaum, seeking for Jesus. *John vi. 24.*

Holding faith and a good conscience, which some having put away, concerning faith, have made *shipwreck*. *1 Timothy 1.*

Two other *ships* loaded with victuals were burnt, and some of the men saved by their shipboats. *Knolles.*

The emperor, *shipping* his great ordnance, departed down the river. *Id. History of the Turks.*

All my followers to the eager foe  
Turn back, and fly like *ships* before the wind. *Shakspeare. Henry VI.*

My father at the road  
Expecting my coming, there to see me *shipped*. *Shakspeare.*

I myself have the very points they blow,  
All the quarters that they know

I' th' *shipman's* card. *Id. Macbeth.*

Few or none know me: if they did,  
This *shipboy's* semblance hath disguised me quite. *Shakspeare.*

Whence the sun 'gins his reflection,  
*Shipwrecking* storms and direful thunders break. *Id.*

Why such impress of *shipwrights*, whose sore task  
Does not divide the Sunday from the week? *Id.*

Before Cæsar's invasion of this land, the Britons had not any *shipping* at all, other than their boats of twigs covered with hides. *Raleigh.*

There made forth to us a small boat, with about eight persons in it, whereof one of them had in his hand a tipstaff, who made aboard our *ship*. *Bacon.*

Let him go on *shipboard*, and the mariners will not leave their starboard and larboard. *Bramhall.*

Instead of a *ship*, he should levy upon his country such a sum of money, and return the same to the treasurer of the navy: hence that tax had the denomination of *ship-money*, by which accrued the yearly sum of two hundred thousand pounds. *Clarendon.*

Friend,  
What dost thou make a *shipboard*? To what end? *Dryden.*

A breeze from shore began to blow,  
The sailors *ship* their oars, and cease to row;  
Then hoist their yards a-trip, and all their sails  
Let fall. *Id.*

Fishes first to *shipping* did impart;  
Their tail the rudder, and their head the prow. *Id.*

Nor is indeed that man less mad than these,  
Who freights a *ship* to venture on the seas,  
With one frail interposing plank to save

From certain death, rolled on by every wave. *Id.*

They might have it in their own country, and that by gathering up the *shipwrecks* of the Athenian and Roman theatres. *Id.*

We are not to quarrel with the water for inundations and *shipwrecks*. *L'Estrange.*

Bold were the men, who on the ocean first  
Spread their new sails, when *shipwreck* was the worst. *Waller.*

In Portugal men spent with age, so as they can-  
not hope for above a year, *ship* themselves away in a  
Brazil fleet. *Temple.*

The numbers and courage of our men, with the strength of our *shipping*, have for many ages past made us a match for the greatest of our neighbours at land, and an overmatch for the strongest at sea. *Id.*

A *ship* carpenter of old Rome could not have talked more judiciously. *Addison.*

The canal that runs from the sea into the Arno, gives a convenient carriage to all goods that are to be *shipped off*. *Id.*

A square piece of marble shews itself to have been a little pagan monument of two persons who were *shipwrecked*. *Id.*

Thou that canst still the raging of the seas,  
Chain up the winds, and bid the tempests cease,  
Redeem my *shipwrecked* soul from raging gusts  
Of cruel passion and deceitful lusts. *Prior.*

This sea war cost the Carthaginians five hundred quinquiremes, and the Romans seven hundred, including their *shipwrecks*. *Arbutus.*

The Roman fleet, although built by *shipwrights*, and conducted by pilots, both without experience, defeated that of the Carthaginians. *Id.*

A single leaf can waft an army o'er,  
Or *ship off* senates to some distant shore. *Pope.*

As when a *shipwright* stands his workmen o'er,  
Who ply the wimble some huge beam to bore,  
Urged on all hands it nimbly spins about,

The grain deep piercing, till it scoops it out. *Id.*

Vast numbers of ships, in our harbours, and *shipwrights* in our sea-port towns. *Swift.*

It curbs their impetuosity; puts the reins into the hands of reason; quells the rising storm ere it make *shipwreck* of the conscience; and teaches a man to leave off contention before it be meddled with. *Mason.*

**SHIP** is a general name for all large vessels, particularly those equipped with three masts and a bowsprit; the masts being composed of a lower-mast, top-mast, and top-gallant mast; each of these being provided with yards, sails, &c. Ships, in general, are either employed for war or merchandise.

**HOSPITAL**, a vessel fitted up to attend on a fleet of men of war, and receive their sick or wounded; for which purpose her decks should be high, and her ports sufficiently large. Her cables ought also to run upon the upper deck, to the end that the beds or cradles may be more commodiously placed between decks, and admit a free passage of the air to disperse that which is offensive or corrupted.

**SHIP, MERCHANT**, a vessel employed in commerce to carry commodities of various sorts from one port to another. The largest merchant-ships are those employed by the different companies of merchants who trade to the East Indies. They are, in general, larger than our forty-gun ships; and are commonly mounted with twenty guns on their upper deck, which are nine pounders; and six on their quarter-deck, which are six pounders.

**SHIP'S FORM GAUGE**, an instrument that has been recommended as fit to ascertain any alteration in the bottom of a ship, by its hogging or sagging; and also to regulate the stowage of a ship. 'All ships,' says Mr. Hutchinson, 'of any consequence are built with staunchions fixed from the kelson to the middle of all the lower-deck beams fore and aft, in order to support them in their exact, regular height, as well as the whole frame of the ship in the regular form in which she was built upon the stocks; yet, notwithstanding these staunchions, it is proved from experience that our ships' bottoms, hitherto, by the pressure of water and improper stowage, have generally been hogged upwards, or sagged downwards, and most about the midship frame or main body of the ship, which is commonly about the fore part of the main hatchway; which naturally makes it the best place at which to fix the ship's form gauge, where either the hogging or

sagging of her bottom may be observed and seen soonest and best, to regulate the stowage of heavy materials to the greatest advantage, so as to keep her bottom nearly in the same form in which she was built. The gauge I recommend is nothing more than a narrow plate of iron divided into inches and quarters like the side of a carpenter's rule. Let this be fixed to the after side of the staunchion now mentioned, with its upper end projecting two or three inches above the staunchion; a groove being cut out for it in the after side of the lower-deck beam, and a mark being made (when the ship is on the stocks) at the part of the beam which corresponds to the 0 on the gauge. When the ship alters in her shape the gauge will slide up and down in this groove, and the quantity of hogging or sagging will be pointed out on the gauge by the mark on the beam. The stowage may then be so managed as to bring this mark to coincide again with the 0, or to approach it as near as we see necessary.

**SHIPS, MANAGEMENT OF, AT SINGLE ANCHOR,** is the method of taking care of a ship while riding at single anchor in a tide-way, by preventing her from fouling her anchor, &c. The following rules for this purpose are given by the ingenious Mr. Henry Taylor of North Shields, and will be found of consequence:—Riding in a tideway, with a fresh-of-wind, the ship should have what is called a short or windward service, say forty-five or fifty fathoms of cable, and always with the helm hard down, but more or less so according to the strength or weakness of the tide. It is a known fact that many ships sheer their anchors home, drive on board of other ships, and on the sands near which they rode, before it has been discovered that the anchor had been moved from the place where it was let go. When the wind is cross, or nearly cross, off shore, or in the opposite direction, ships will always back. This is done by the mizen-top-sail, assisted, if needful, by the mizen-stay-sail; such as have no mizen-top-sail commonly use the main-top-sail, or if it blows fresh, a top-gallant-sail, or any such sail at the gaff. In backing, a ship should always wind with a taught cable, that it may be certain the anchor is drawn round. In case there is not a sufficiency of wind for that purpose, the ship should be hove apeak. Riding with the wind afore the beam, the yards should be braced forward; if abaft the beam they are to be braced all a-back. If the wind is so far aft that the ship will not back (which should not be attempted if, when the tide ceases, the ship forges ahead and brings the buoy on the lee-quarter), she must be set a-head: if the wind is far aft, and blows fresh, the utmost care and attention are necessary, as ships riding in this situation often break their sheer, and come to windward of their anchors again. When the ship lies in this ticklish situation, the after-yards must be braced forward, and the fore-yards the contrary way: she will lie safe, as the buoy can be kept on the lee-quarter, or, suppose the helm is a-port, as long as the buoy is on the larboard quarter. With the helm thus, and the wind right aft, or nearly so, the starboard, main, and fore braces should be hauled in. This supposes the main braces to lead forward. When the ship begins to tend to

leeward, and the buoy comes on the weather-quarter, the first thing to be done is to brace about the fore-yard; and, when the wind comes near the beam, set the fore-stay-sail, and keep it standing until it shakes; then brace all the yards sharp forward, especially if it is likely to blow strong. If lying in the aforesaid position, and she breaks her sheer, brace about the main yard immediately; if she recovers and brings the buoy on the lee or larboard quarter, let the main-yard be again braced about; but if she come to a sheer the other way, by bringing the buoy on the other quarter, change the helm and brace the fore-yard to. Riding leeward tide with more cable than the windward service, and expecting the ship will go to windward of her anchor, begin as soon as the tide ceases to shorten in the cable. This is often hard work; but it is necessary to be done, otherwise the anchor may be fouled by the great length of cable the ship has to draw round; but, even if that could be done, the cable would be damaged against the bows or cut-water. It is to be observed that, when a ship rides windward tide, the cable should be cackled from the short service towards the anchor, as far as will prevent the bare part touching the ship. When the ship tends to windward, and must be set a-head, hoist the fore staysail as soon as it will stand, and, when the buoy comes on the lee-quarter, haul down the fore-stay-sail, brace to the fore-yard, and put the helm a-lee; for till then the helm must be kept a-weather and the yards full. When the ship rides leeward tide, and the wind increases, care should be taken to give her more cable in time, otherwise the anchor may start, and probably it will be troublesome to get her brought up again; and this care is the more necessary when the ship rides in the hause of another ship. Previous to giving a long service it is usual to take a weather-bit, that is, a turn of the cable over the windlass end, so that in veering away the ship will be under command. The service ought to be greased, which will prevent its chafing in the hause. If the gale continues to increase, the topmasts should be struck in time; but the fore-yard should seldom, if ever, be lowered down, that in case of parting the foresail may be ready to be set. At such times there should be more on deck than the common anchor-watch, that no accident may happen from inattention or falling asleep. In a tide-way, a second anchor should never be let go but when absolutely necessary; for a ship will sometimes ride easier and safer, especially if the sea runs high, with a very long scope of cable and one anchor, than with less length and two cables; however, it is advisable, as a preventive, when ships have not room to drive, and the night is dark, to let fall a second anchor under foot, with a range of cable along the deck. If this is not thought necessary to be done, the deep sea lead should be thrown overboard, and the line frequently handled by the watch, that they may be assured she rides fast. If at any time the anchor watch, presuming on their own knowledge, should wind the ship, or suffer her to break her sheer without calling the mate, he should immediately, on the very first opportunity, oblige the crew to leave the anchor in sight, which will prevent the commission of

the like fault again; for, besides the share of trouble the watch will have, the rest of the crew will blame them for neglecting their duty. Prudent mates seldom lie a week in a roadstead without heaving their anchor in sight; even though they have not the least suspicion of its being foul. There are other reasons why the anchor should be looked at; sometimes the cable receives damage by sweeping wrecks or anchors that have been lost, or from rocks or stones; and it is often necessary to trip the anchor, in order to take a clearer birth, which should be done as often as any ship brings up too near.

*Method for the safe removal of ships when driven on shore.*—For this purpose empty casks are usually employed to float off the vessel, especially if she is small, and at the same time near the port to which it is proposed to conduct her. In other cases, the following method adopted by Mr. Barnard will answer. ‘On January 1st, 1777,’ says Mr. Barnard (*Philosophical Transactions*, vol. lxx., part. 1), in a most dreadful storm, the York East Indiaman, of 800 tons, homeward bound, with a pepper cargo, parted her cables in Margate roads, and was driven on shore, within 100 feet of the head and thirty feet of the side of Margate pier, then drawing twenty-two feet six inches water, the flow of a good spring tide being only four feet at that place. On the 3d, I went down, as a ship-builder, to assist, as much as lay in my power, my worthy friend Sir Richard Hoatham, to whom the ship belonged. I found her perfectly upright, and her shere (or ‘de appearance) the same as when first built, but sunk to the twelve feet water mark fore and aft in a bed of chalk mixed with a stiff blue clay, exactly the shape of her body below that draft of water: and from the rudder being torn from her as she struck coming on shore, and the violent agitation of the sea after her being there, her stern was so greatly injured as to admit free access thereto, which filled her four days equal to the flow of the tide. Having fully informed myself of her situation and the flow of spring-tides, and being clearly of opinion she might be again got off, I recommended, as the first necessary step, the immediate discharge of the cargo: and, in the progress of that business, I found the tide always flowed to the same height on the ship; and when the cargo was half discharged, and I knew the remaining part should not make her draw more than eighteen feet water, and while I was observing the water at twenty-two feet six inches by the ship’s marks, she instantly lifted to seventeen feet eight inches; the water and air being before excluded by her pressure on the clay, and the atmosphere acting upon her upper part equal to 600 tons, which is the weight of water displaced at the difference of these two drafts of water. The moment the ship lifted, I discovered she had received more damage than was at first apprehended, her leaks being such as filled her from four to eighteen feet water in an hour and a half. As nothing effectual was to be expected from pumping, several

scuttles or holes in the ship’s side were made, and the valves fixed thereto to draw off the water at the lowest ebb of the tide, to facilitate the discharge of the remaining part of the cargo; and, after many attempts, I succeeded in an external application of sheep skins, sewed on a sail and thrust under the bottom, to stop the body of water from rushing so furiously into the ship. This business effected, moderate pumping enabled us to keep the ship to about six feet water at low water, and by a vigorous effort we could bring the ship so light as (when the cargo should be all discharged) to be easily removed into deeper water. But as the external application might be disturbed by so doing, or totally removed by the agitation of the ship, it was absolutely necessary to provide some permanent security for the lives of those who were to navigate her to the Thames. I then recommended as the cheapest, quickest, and most effectual plan, to lay a deck in the hold, as low as the water could be pumped to, framed so solidly and securely, and caulked so tight, as to swim the ship independent of her own leaky bottom. Beams of fir timber twelve inches square were placed in the hold under every lower deck beam in the ship, as low as the water could permit; these were in two pieces for the convenience of getting them down, and also for the better fixing them, of an exact length, and well bolted together when in their places. Over these were laid long Dantzie deals of two inches and a half thick, well nailed and caulked. Against the ship’s side, all fore and aft, was well nailed a piece of fir twelve inches broad, and six inches thick the lower and three inches on the upper edge to prevent the deck from rising at the side. Over the deck, at every beam, was laid a cross piece of fir timber six inches deep and twelve broad, reaching from the pillar of the hold to the ship’s side, on which the shores were to be placed to resist the pressure of the water beneath. On each of these, and against the lower deck beam, at equal distances from the side and middle of the ship, was placed an upright shore, six inches by twelve, the lower end let two inches into the cross piece. From the foot of this shore to the ship’s side, under the end of every lower deck beam, was placed a diagonal shore six inches by twelve, to ease the ship’s deck of part of the strain by throwing it on the side. An upright shore of three inches by twelve was placed from the end of every cross piece to the lower deck beams at the side, and one of three inches by twelve on the midship end of every cross piece to the lower deck beam, and nailed to the pillars in the hold. Two firm-tight bulkheads or partitions were made as near the extremes of the ship as possible. The ceiling or inside plank of the ship was very securely caulked up to the lower deck, and the whole formed a complete ship with a flat bottom within side, to swim the outside leaky one; and that bottom being depressed six feet below the external water, resisted the ship’s weight above it equal to 581 tons, and safely conveyed her to the dry dock at Deptford.

## S H I P - B U I L D I N G .

This important subject, taken in its strict and proper signification may be defined, the art of constructing or building ships: in its less confined and more extended application, however, it embraces, 1st. The plan or form of the construction of ships, comprehending all that falls within the science or theory of naval architecture; 2d. The execution of the plans formed, or the art of ship-building.

*History.*—Naval architecture can hardly be said to have existed amongst the ancient nations of Europe, and all the researches that have been made into its origin and progress have but ill rewarded the labor and loss of time bestowed upon them. To whom we are indebted for this noble invention is uncertain; the probability is that to no nation in particular can it be attributed, but that it was the simultaneous offspring of necessity in different parts of the world. “The truth is,” as sir Walter Raleigh justly observes, “that all nations, how remote soever, being able and reasonable creatures, and enjoying one and the same imagination and fantasy, have devised according to their means and materials the same thing.” Thus, we find boats precisely similar to the ancient British coracles, made of wattled twigs of willow, and covered with the hides of oxen, employed, in the time of Herodotus, to bring down to Babylon the productions of the higher parts of Assyria, and the countries watered by the Euphrates. In Hannibal’s invasion of Italy, his army was transported over the Rhone by the Gauls in canoes made of the trunks of trees, exactly resembling those in almost universal use among the Indians of America, and the savage islanders of the South Seas.

The first who appear to have made any though but little progress in the art, were the Egyptians and Phœnicians. The Nile, which intersected their country, presented to the former a less dangerous opportunity of making their first attempts in navigation than the sea did; whilst the enterprising spirit which marked the Phœnician character, together with the advantageous situation of their two great cities, Tyre and Sidon, urged them to bolder attempts. The bark used on the Nile, when Herodotus visited Egypt, was formed of the acantha tree, a species of thorn, cut into pieces about three feet square; these were lapped over like tiles, and fastened together by a number of wooden pins similar to the tree nails-of modern times. The hull being thus completed, a mast formed of a straight stick of the acantha, and a sail of papyrus, furnished the means of impelling it, while a rudder passing through the keel or bottom of the vessel served to direct it. The religious prejudices of the Egyptians confining their navigation to the Nile during several centuries, and this mode of construction sufficing for all purposes connected with it, they did not make any further attempts at improvement. The case was entirely different with the inhabitants of Tyre and Sidon, whom the united

testimony of ancient authors warrants us in considering as the boldest and most experienced navigators of the ancient world. No particular account is however afforded us of the form or mode of construction of their ships farther than this,—that for the purposes of commerce they were considerably shorter and broader than those which in after times were devoted to the destructive ends of war and plunder.

However, while we attribute this comparative pre-eminence in the early improvement of the art to the Phœnicians, we are not to consider every other nation as totally ignorant of it. One nation of the East, scarcely known to the ancients even by name, had in all probability made a very considerable progress in naval Architecture. The ships of the Chinese, as described by that accurate observer and faithful narrator, Marco Polo, were precisely in the thirteenth century what they now are, and what they probably were thirteen centuries before that period. We know, from the account of one of the Mahometan travellers who visited China four centuries before Marco Polo’s time, that these ships were in the habit of trading to the Persian Gulph, and that they were *large* ships, for “in this sea,” says he, “are rocks called Oman, and a narrow strait called Dordur, between two rocks, through which *small* vessels do venture, but the *Chinese ships* dare not.” They are now and were such as may fairly be put on a level with the ships of Great Britain in the early part of the reign of Henry VIII. Still in the East in general, the art was in the lowest state, especially if we are to believe that 3000 ships of Semiramis, carried on camels’ backs from the shores of Syria to the banks of the Indus, overcame 4000 ships of Staurobates on that river. The state in which the art of ship-building was found when Europeans re-visited India certainly does not invalidate the accounts given of it by ancient authors.

The principal improvements introduced by the Greeks and Romans upon the vessels of the Phœnicians were, an increase of their bulk, and an adaptation of their form and construction to the peculiar use for which they were designed. Experience soon taught them that sails, applicable and even necessary as they were to vessels engaged in the purposes of commerce, were by no means proper to be used at all times in ships of war, the effect and almost the utility of the latter depending entirely on their celerity of motion at a particular point of time, while the benefits of the former were mainly derived from the greatest abridgment of labor and expense that could possibly be made. On the same principle it was that they introduced a distinction between the form of their ships of war and those of burthen; a distinction which became common to all nations as soon as the art of navigation was applied to two purposes, and which has in some degree been continued even to the present day. The “navis longa,” or ship of war, was much longer in proportion to its breadth than

the "navis oneraria," or ship of burthen, which, built either for the purposes of commerce, or for the conveyance of troops and warlike stores, was deeper and broader, so as to be capable of containing a much larger quantity of commodities than under the adoption of any other practised form.

The hull of the ships of the ancients consisted of the "prora" or head, the "puppis" or stern, and the "alveus" or midship frame. Under the bottom and along the centre of the latter passed the "carina" or keel, which served as it does in modern use for the foundation of the ribs or timbers which strengthened the sides. To the keel subsequent experience suggested the addition of the keelson, which confining the heads of the floor timbers, then in two parts, jointed into and divided by the keel, very materially contributed to the strength and safety of the vessel. Close to the keelson was the well, intended as a receptacle for the bilge water, and immediately above it was the hold. Aloft, beams were fixed which served both to support the deck and strengthen the fabric, and the planking being put on, completely enclosed the frame, being firmly attached and fastened to it by means of large nails or bolts of iron. As it was found impossible, particularly for vessels of large dimensions, to procure planks of sufficient length to extend from stem to stern, the danger or inconvenience that might have arisen from the starting of an end was in a great measure obviated by the ingenious method of dovetailing them into one another. To render the seams water-tight, the frame was then besmeared with a mixture of wax and pitch or resin, and with the addition of holes in the sides to receive the oars, and seats for the rowers, the hull was complete.

Up to the period of the commencement of the empire, the Romans had vessels of different sizes, variously named from their rows or ranks of oars. Those which had two rows or tiers were called biremes; three, triremes; four, quadriremes; and five, quinqueremes or penteres. But during the reign of Augustus, and the subsequent ages of the empire, scarcely any vessels were used except the Liburnæ, a species of light vessel without decks and with only one tier of oars, which obtained their great celebrity on account of the very singular service they rendered Augustus at the battle of Actium against the "floating castles and towers" of his opponent. "The navy maintained by the emperors might seem inadequate to their greatness, but it was fully sufficient for every useful purpose of government. The ambition of the Romans was confined to the land, nor was that warlike people ever actuated by the enterprising spirit which had prompted the navigators of Tyre, of Carthage, and even of Marseilles, to enlarge the bounds of the world, and to explore the most remote coasts of the ocean."

It is singular, too, that its revival should have taken place among a people now almost unknown, to speak of them in the highest terms as a maritime power. The Veneti, driven from the lands of their forefathers during the invasion of Italy by Attila, retired to a cluster of small islands at the head of the Adriatic, where, in a situation admirably adapted for the purposes to which they devoted themselves, they slowly, but progressively raised themselves to a high pitch of affluence and power. The effect on naval architecture was such as might have been expected, and though the Venetian galley of the ninth century could not boast of the ostentatious magnificence of the floating palaces of Trajan and Caligula, yet as it combined much of their elegance and splendour with more of strength and real utility than they possessed, it may indeed be said to have surpassed them.

The Mediterranean galley of that period bore a great resemblance to that of ancient Rome; it was low-built, sharp, of great length in proportion to its breadth, and was nearly identical with it in the arrangement of the head and stern; in fact, it possessed all those peculiarities which have for ages distinguished it from every class of vessels in existence. The rivalry of the Venetians and Genoese, was a source of material improvement in the mechanical portion of the art of ship-building, although the peculiarity of their local situation, and the contracted scale on which naval warfare was then conducted, rendered any great extension of ideas, or very considerable alteration in marine architecture, impossible because unnecessary. The vessels of the Italian states, both of commerce and of war, fully answered the purposes to which they were devoted; and so little alteration, except in the mechanical arrangement of their parts, took place from the tenth to the fourteenth century, that a description of the galley of the one period would almost suffice for that of the other.

The discoveries of the mariner's compass and of gunpowder, which followed closely upon the heels of each other in the fourteenth century, gave however a new and powerful impulse to ship-building and navigation; but it was not until after the introduction of cannon and their more general application to the purposes of naval warfare, that we find that material variation and enlargement in the structure of vessels, especially of those intended for war, which quickly grew into general use, and has indeed been gradually increasing down to the present day. The progressive steps by which this was effected, and by which the galley was converted into what is now called a ship of war, may be traced in a comparison of the three classes of vessels in use among the Mediterranean powers during the fifteenth and sixteenth centuries, the galley, the galleas, and the galleon. The first

still retained the use of oars, and indeed varied very little in general appearance from that vessel. But when the use of artillery in ships of war became more general and particularly towards the end of the fifteenth century, when port-holes were first introduced, it became necessary to elevate their sides considerably more than it had been customary to do before. To have effected this by continuing them to the requisite height in a prolongation of the same curved line in which the sides of the galley rose, would have been both inexpedient and dangerous; for, independent of the length of beam which would have been necessary, the form of that curve was but ill adapted to resist the great pressure occasioned by the weight of the heavy cannon on the deck. To remedy this the builders of Venice fell into the strange absurdity of contracting vessels in their upper works to such a degree that the deck was scarcely half the breadth of the hold. This we observe in the galleon, which was much broader and somewhat shorter than the galley. Its superiority also over which was strikingly evinced at the battle of Lepanto, where six Venetian galleons effectually withstood the onset of the whole Turkish fleet.

The Spaniards and Portuguese followed the example of the Venetians; the Dutch and other northern powers derived their knowledge from the same masters; and the English were indebted to Italian shipwrights, whom Henry VIII. invited over to his kingdom, that they might impart to his subjects a portion of their own superior skill in the art. Previous to his reign England had no regular navy, and on occasions of emergency ships were hired from the Venetians, Genoese, the Hanse Towns, and other trading people, which, together with the complement furnished by the Cinque Ports, formed the strength of her fleets. Aware of the inconvenience of this, Henry resolved to establish a permanent naval force, and at the same time he encouraged his people to change their rude ill-constructed barks for the superior pieces of mechanism exhibited by their preceptors. He caused several "shippes royall" to be built, of which the Regent was the largest, being of about 1000 tons, and carrying from 600 to 700 men. Being burnt in action the same year she was launched, she was replaced by the "Harry grace a Dieu." If we are to trust the curious representation transmitted to us of this ship by a drawing in the Pepysian Library, the slightest inspection will be sufficient to convince any one that a vessel so constructed could never have been serviceable at sea as a ship of war, or even safe to the navigators were the water otherwise than perfectly calm. Her high and lofty poop, and her forecastle of three tier of guns, her shapeless body and her four short masts, bear altogether a striking resemblance to a large Chinese junk.

We must not however attempt to estimate the size of these ships as we are accustomed to do with those of the present day, from the number of their guns; and we shall readily conceive how unfit they were for carrying those allotted to them, when we are told that in coming out of

Portsmouth Harbour, "the Marie Rose by a little sway of the ship in casting about (her ports being within sixteen inches of the water) was overset and lost, &c."

Of the general contour or shape of ships only one idea seems to have been entertained by maritime powers, till towards the end of the seventeenth century; but as regards their burthen and force the case was different, the Spanish and Portuguese ships of war having attained a pre-eminence which they continued to maintain for a long period of time. Before the end of the sixteenth century some of their vessels mounted nearly 80 carriage guns; and in tonnage their superiority was still greater. The largest ship in the British Navy at the same period, the Triumph, carried only 50 guns, or cannon which deserved that name. The Dutch and Northern powers were still more moderate, endeavouring however to make up their deficiency in this respect, by increasing their numbers.

The earliest ship of three whole tiers of guns, of which we have any distinct records appears to have been the Sovereign of the Seas, of 100 guns, built by Phineas Pett, in 1637. Considering the then very imperfect state of naval science, and the almost total absence of data to guide him, this attempt of Pett's was certainly a very hazardous one, and nothing but the bold increase of dimensions, which his science enabled him to give to this ship, rendered it at all successful. She was found however to partake too largely of the prevailing defect which characterised the vessels of her day; the great weight of her enormous upper works, rendered her so top-heavy, that it became necessary to remove one of her decks, and her name was changed to the Royal Sovereign; in this state she continued for nearly 60 years, one of the best and most durable ships in the British Navy.

But about this period, towards the end of the seventeenth century, a new era may be said to have commenced in Naval Architecture. While, in this country after the death of Pett, the subject was entirely neglected, in France every incitement was held out, under the auspices of Louis XIV., and his successors, for men of genius and learning, to cultivate the mathematical principles of naval construction. The physico-mathematical laws of floating bodies which from the time of Archimedes, had lain dormant, began to be applied to ships, and the gradual developement of the fundamental principles of naval construction, by some of the most eminent mathematicians of the eighteenth century, gave rise to ships of the line of greatly enlarged dimensions and improved qualities. The superior knowledge of the French constructors enabled them at an early period of their efforts, to overcome those obstacles in the construction of two-decked ships of the line, which baffled the skill of our naval architects; and though at first they did not meet with equal success in their ships of 90 and 104 guns (which still however in qualities greatly surpassed our own of a similar class,) yet the constant patronage bestowed on them by their govern-

ment was at length rewarded by the production of three-decked ships of the line of superior force, and endowed with every desirable qualification in almost as eminent a degree as were those of two decks; and a further improvement in 1786, which increased their force to 120 guns, and carried the length to 209 feet, may be said to have completed their triumph of the French architects. At this time, and until 1790, the largest three-decker in the English navy, was the Victory, of 100 guns, and 186 feet in length. In that year was built the Ville de Paris, of 100 guns, and 190 feet in length, and the victory of St. Vincent, in 1797, put in our possession the San Josef of 112 guns, which was for many years the largest and finest ship in the fleet. But that which contributed most materially to the improvement of, and in fact furnished a model for, our first class ships was the obtaining possession of that splendid proof of the skill and science of the French naval constructors, the Commerce de Marseilles, which was brought to England, from Toulon, in 1793, and on the plan of which the Caledonia was formed in 1808. The following are the comparative dimensions of the two ships.

	Length of Gun Deck. ft. in.	Extreme Breadth ft. in.	Tonnage.
Caledonia	205 0	53 3	2616
Commerce de Marseilles	208 4	54 9½	2747

If we attentively examine the progress of marine architecture, since the introduction of cannon into naval warfare, and more particularly during the last century and a half, we shall clearly perceive that one cause of the improvements that have been made in the sea-going qualities of ships of the line is the gradual increase of dimensions which has taken place, more especially as regards the length, the ratio of which to the breadth has been augmented within the last century, from 3*1*/*2*. 1 to 4. 1. Whether that principle is capable of still further application, or whether we have arrived at its utmost practicable limits, is a question which remains to be decided. The French are said to be constructing a first-rate of 232 English feet in length, and the Americans have ventured on a still bolder attempt; they are said to have built a three decker of 245 feet in length, and 56 feet in breath, to carry 135 guns. But it yet remains to be seen on actual trial, whether this be really an improvement and whether as has been supposed by some, it will not render the manœuvring of a ship too slow. On a subject involving such a complication of circumstances an opinion cannot with propriety be hazarded either the one way or the other.

#### SECT. I.—OF THE PROPERTIES OF SHIPS.

The principal elements to be determined in the formation of a design for a ship of war are 1st, its displacement, or the quantity of water which it will displace, when permanently at rest, together with the centre of gravity of that displacement; 2nd, its stability, or the power of

resistance, which it will possess, to the inclination produced by the action of the wind upon the sails; and 3rd, the centre of gravity of the vessel itself considered as a heterogeneous body. We shall proceed to consider each of those three subjects as comprehensively as our limits will allow.

#### CHAP. I.—OF THE DISPLACEMENT. \*

When a solid floats in a liquid it displaces a quantity of that liquid, equal in weight to the entire solid, and in bulk to only that portion of it which is immersed; and the greater will be the weight of the solid, the greater will be the magnitude of the volume displaced, and of the part immersed. Therefore the quantity of water displaced by the immersion of a ship is equal in weight to the ship itself. In ships of war it is absolutely necessary that the line of floatation, or the line marking the depth of immersion be previously determined, so that on actual trial, the immersion may be found neither too great or too small, in the one case endangering the stability of the ship, in the other its immediate safety. This line varies with the displacement, to find an expression for which in terms of some known properties of the ship becomes then of the highest importance. Were a ship any regular figure, this might easily be accomplished by the aid of geometry, but the irregularity and variety of its curves render it a matter of impossibility to obtain an exact measure of the solid contents of its displacement. A method of approximation is given by Bouguer, which consists in dividing it by horizontal and vertical planes into a number of small solids, the contents of each of which are found separately by considering its curved lines and surfaces as straight lines and planes, and the sum of the solidities of all is the measure of the displacement.

This operation gives a result sufficiently accurate for general practice, and, by increasing the number of sections, the error which arises from the supposition of right lines and planes would become insensible; still it is better to employ the more rigorous method of Chapman, which, when both are applied to the same number of sections, is much more exact, without being less expeditious. It proceeds upon the supposition that the curves of the displacement are portions of a parabola, which, from the infinite variation of which it admits, may be made almost to coincide with any curve for a small distance; and from the properties of that curve and those of the trapezoid is obtained an expression sufficiently simple for practical application. This is effected by what is termed the method of equidistant ordinates, which was originally employed by Stirling and Simpson to approximate the areas of curves of any kind, though to Chapman certainly belongs the merit of having first applied it to naval mensurations. We shall endeavour briefly to develop it.

Let A H L O G (PLATE I, FIG I.) be a plane bounded by any curved line whatsoever; it is required to find the area of that plane. Divide

the line A G into a number of equal parts, and through the points of division A, B, C, D, E and F, draw A H, B I, C K, D L, E M, F N, and G O, perpendicular to A G, and cutting the curve in the points H, I, K, L, M, N, and O, and join the straight line H K. Each of the spaces such as A H I K C will then be made up of a trapezoid, A H K C, and a parabolic segment, H I K R. As the distance between the points H, I and K, is by supposition small, any other curved line passing through those points would not differ materially from the curve H I K. Therefore in calculating the area of H I K R we shall not commit any considerable error if we substitute for that curve any other passing through the same points; and as we have a simple expression for the value of a parabolic segment, let us suppose the substituted curve to be of that nature. Then I R will be a diameter, and H R, R K, ordinates to the parabola H I K. Put A H, B I, C K, D L, &c., = a, b, c, d, e, f, g, respectively, and let m express their common distance. The area of the trapezoid A H K C = m, (a+c), (Art. Mensuration, Prob. V); and the area of the parabolic segment H I K R = two-thirds of the parallelogram H K. I R, (Art. Mens. Prob. XIX.) =  $\frac{1}{3}$  (H P × I R). Put I R = B I - B R, and B R =  $\frac{1}{2}$  (A H + C K) therefore H I K R =  $\frac{1}{3}$  (b -  $\frac{1}{2}$  (a+c)) × 2m = (2b - a - c)  $\frac{1}{3}$ m. Therefore A H I K C =  $\frac{1}{3}$ m (a+4b+c). In the same manner it will be found that C K L M E =  $\frac{1}{3}$ m (c+4d+e) and E M N O G =  $\frac{1}{3}$ m (e+4f+g). Therefore the area of the whole surface A H I L O G will be equal to the sum of these three quantities or = (a+4b+2c+4d+2e+4f+g)  $\frac{1}{3}$ m. This expression shows us that to find the area of a figure bounded by a curve of any kind, we must first divide a line supposed to pass through the figure in the direction of its greatest length, and which we may call its axis into an even number of equal parts, and then erect perpendiculars or ordinates to this axis through the points of division, which ordinates will thus be uneven in number. Giving the first ordinate unity for a co-efficient, we must multiply the second by 4, the third by 2, the fourth by 4, the fifth by 2, and so on alternately multiply by those numbers until the last ordinate which, as the first, is multiplied by 1. Adding these products together, the sum is to be multiplied by one-third of the common distance of the ordinates, and the result will be the area required.

We must now apply this demonstration to find the contents of solid bodies bounded by curved surfaces of any kind. Let S R V (FIG. 2) be a solid generated by the revolution of any curve S M V about its axis S H; it is required to ascertain the solidity of the whole body S R V and a part M V R P. Divide the line Q H into a certain number of equal parts and supposed planes passing through the points of division, perpendicular to the axis S H, which call m. Put a, b, c, respectively equal to the diameters V R, L O, and M P of those circular planes or sections, produce H V, N L, and Q M to the points T, G, and F, so that the lines H T, N G,

and Q F may be respectively equal to the areas of the corresponding circular sections (those areas being here considered as abstract numbers), and through T, G, and F draw the curve T G F. It is evident that the area F Q H T will be an expression for the solidity of M P R V. Then if p be the area of a circle whose diameter is unity,  $p a^2$ ,  $p b^2$ ,  $p c^2$ , will be the areas of the sections made by the planes R V, O L, P M, and the ordinates H T, N G, and Q F being respectively equal to  $p a^2$ ,  $p b^2$ ,  $p c^2$ , the expression which we obtained for the area of a surface bounded by a curved line is also applicable to find the contents of a solid, bounded by a curved plane. Thus if Q H be divided into only two equal parts, the area of H T F Q will = (F Q + 4 G N + T H)  $\frac{1}{3}$  N H, and consequently the solidity of the body M P R V =  $(c^2 + 4 b^2 + a^2) p \times \frac{1}{3} N H$ . If H Q = S Q =  $\frac{1}{2}$  S H =  $\frac{1}{2} m$ , and the plane which passes through S being O, the solidity of the whole body S R V =  $(a^2 + 4 b^2 + c^2) p \times \frac{1}{3} H Q = (4 c^2 + a^2) p \times \frac{1}{3} m$ .

If the generating line S M V were a right line, the solid would be a cone, and then R V = 2 P M, or R V<sup>2</sup> = 4 P M<sup>2</sup> or  $a^2 = 4 c^2$  and the expression for the solidity in this case would become =  $2 a^2 p \times \frac{1}{3} m = p a^2 \times \frac{1}{3} m$ , or = the product of the surface of the base by one-third of the height; the same result as that which is obtained by ordinary geometry. (Art. Mens. Prob. XXVI). Again, if S M V were a parabola, the solid would be a paraboloid, and R V<sup>2</sup> : P M<sup>2</sup> :: S H : S Q or :: 2 : 1. Therefore R V<sup>2</sup> = 2 P M<sup>2</sup> or  $a^2 = 2 c^2$ , and the expression would become =  $3 a^2 p \frac{1}{3} m = p a^2 \frac{1}{2} m$ , the same as that which is determined by other means. (Mens. Prob. XXXIX). When S M V is a quarter of a circle, or of an ellipse, the solid becomes a hemisphere or a semielipsoid, and the result obtained for its solidity in those cases by means of the above formula agree precisely with those obtained by the ordinary method. The expression is then a general one; it is also applicable to the measurement of solids whose generating curve does not take its origin from the axis. Let S' S' R' V (FIG. 3.) be such a solid whose generating line S' M V does not commence from the axis S Q H. Calling f the diameter of its extreme vertical section and preserving the preceding denominations, it is evident that the solidity of this body will be = ( $f^2 + 4 c^2 + a^2$ )  $p \frac{1}{3} m$ ; an expression which becomes the same as the formula we have obtained above if we suppose  $f = 0$ . If the line S' M V be a right line and parallel to the axis S H, the solid will be a cylinder, all the sections of which  $p a^2$ ,  $p b^2$ ,  $p c^2$ , will be equal to the base, and the expression for the solidity becomes =  $6 a^2 p \frac{1}{3} m = p a^2 m$ , or the product of the base by the height.

If S' M V be a right line, but not parallel to the axis, the solid will be a truncated cone; if it be a parabola the solid will be a truncated paraboloid; if a portion of the circumference of a circle or of an ellipse, it will be a portion of a sphere or of an ellipsoid. In all these cases the formula must contain three terms, and we can only reduce it to two, but in considering the first term as equal to the sum of the two

first, as in the case where  $f=0$ , when the expression  $(o+4c^2+a^2) \frac{1}{3}m$  becomes  $(4c^2+a^2) \frac{1}{3}m$ .

We have before observed, that it is of the utmost importance to know, previous to actual trial, what will be the amount of immersion of a ship, especially of war; for it is absolutely necessary that her lower ports should be elevated a certain distance from the water, and it is equally indispensable that that distance be not too great. To ascertain them from the plans which have been laid down, what this amount will be, a line must be found such that a horizontal plane drawn through it shall cut off a portion of the vessel equal in bulk to a quantity of water, whose weight is that of the entire ship and its contents. That line will mark the depth of immersion of the ship.

Let FIG. 1, PLATE II., be the plan of elevation of a ship. Assume A B, its line of floatation when fully equipped, it is required to know if the portion A B C D, cut off by a horizontal passing through that line, will be equal in bulk to a quantity of water, equal in weight to the ship. Draw the lines marked  $\Phi$ , 3, 6, 9, 12, &c., C, F, I, &c., which will represent as many vertical sections at equal distances, and perpendicular to the keel. The elevation of these sections is given in FIG. 2,  $\Phi$  is the midship or greatest section, to the right of which is represented the half of each after section, 3, 6, 9, 12, &c.; to the left of each forward section, C,

F, L, M, &c. At any given equal distances draw lines parallel to A B (FIG. 1); these lines are also represented on the vertical elevation, FIG. 7, PL. 1, by those marked 1, 2, 3, 4, 5, 6, 7; the figure 1 expressing the first or upper line of floatation, 2 the second, 3 the third, and so on. Each section will then have seven ordinates to it, whose dimensions are known, and its area may be obtained by the application of the expression which we have found for the surface of a plane bounded by any curved line  $= (a+4b+2c+4d+2e+4f+g) \frac{1}{3}m$ ,  $a, b, c, d, &c.$ , representing severally the first, second, third, fourth, &c., ordinates. Substituting then for these ordinates their respective values which are obtained by admeasurement from the plans laid down, and giving them for co-efficients, 1, 4, 2, 4, 2, 4, 1, their sum multiplied by one-third of the common distance  $m$  of the lines of floatation will give the area of the half of that portion of the section which is included between the first and last ordinates. The area of the remaining triangular portion contained between the last line of floatation, and the keel being added, the result will be the area of the entire half section. Our limits necessarily preclude us from entering into the process of the calculation of the area of every section, we shall, therefore, content ourselves with giving the following tabular view, which exhibits the operation for three sections, the midship  $\Phi$ , the foremost W, and the aftermost 27.

TABLE I.

Lines of Float.	SECTION $\Phi$ .			SECTION W.			SECTION 27.		
	Ordinates.	Co-efficients.	Area.	Ordinates.	Co-efficients.	Area.	Ordinates.	Co-efficients.	Area.
1	14.80	$\times 1 \equiv$	14.80	5.00	$\times 1 \equiv$	5.00	4.67	$\times 1 \equiv$	4.67
2	14.40	$\times 4 \equiv$	57.60	3.73	$\times 4 \equiv$	14.92	2.16	$\times 4 \equiv$	8.64
3	13.67	$\times 2 \equiv$	27.34	2.59	$\times 2 \equiv$	5.18	1.25	$\times 2 \equiv$	2.50
4	12.48	$\times 4 \equiv$	49.92	1.70	$\times 4 \equiv$	6.80	0.86	$\times 4 \equiv$	3.44
5	10.78	$\times 2 \equiv$	21.56	1.05	$\times 2 \equiv$	2.10	0.62	$\times 2 \equiv$	1.24
6	8.05	$\times 4 \equiv$	32.20	0.60	$\times 4 \equiv$	2.40	0.45	$\times 4 \equiv$	1.80
7	3.00	$\times 1 \equiv$	3.00	0.30	$\times 1 \equiv$	0.30	0.40	$\times 1 \equiv$	0.40
			206.42			36.70			22.69
	$\frac{1}{3} m = 1.62 \equiv$					0.54			0.54
			82568			14680			9076
			103210			18350			11345
Part between last ord. & keel . . . . .		111.4668				19.8180			12.2526
		2.4				0.15			0.52
Area		113.87				19.97			12.77

As the two parts into which a ship is divided by a vertical plane passing through the longer axis and coincident with the keel, are equal and similar, it is usual in ascertaining the displacement, to perform the calculation for only one of those parts, and then double the result; it is for this reason that we have, as will be seen above, operated for each half section.

Let us suppose the formula by the application of which, we have obtained those results to have been extended to every vertical section, and the areas of all to have been thus found. In conformity with the demonstration which we have given above, we must, to find the solidity of the displacement, employ those areas as we have just employed their ordinates; that is to say,

giving the first and last unity for co-efficients, we must multiply the intervening ones alternately by 4 and 2, the sum of these products being then multiplied by one-third of the common distance between the sections, the result will be the solid contents of the portion included between the two extreme sections. Adding to this the solidity of the two portions comprised between the foremost section and the stem, and the aftermost one and the stern, the sum will be the measure of the entire contents of the displacement, exclusive of the planking, the stem, the stern-post, and the keel. The following table shows the operation.

TABLE II.

Sections.	Areas.	Co-efficients.	Products.
27	12.77	$\times 1 =$	12.77
24	31.61	$\times 4 =$	126.44
21	48.93	$\times 2 =$	97.86
18	64.16	$\times 4 =$	256.64
15	78.17	$\times 2 =$	156.34
12	90.79	$\times 4 =$	363.16
9	101.27	$\times 2 =$	202.54
6	108.57	$\times 4 =$	434.28
3	113.13	$\times 2 =$	226.26
$\Phi$	113.87	$\times 4 =$	455.48
C	111.97	$\times 2 =$	223.94
F	106.10	$\times 4 =$	424.40
I	97.18	$\times 2 =$	194.36
M	83.66	$\times 4 =$	334.64
P	66.02	$\times 2 =$	132.04
S	44.32	$\times 4 =$	177.28
W	19.97	$\times 1 =$	19.97
			3838.40
$\times \frac{1}{3}$ common dist. = 6.27			2.09
			3454.560
			767680
			8022.2560
Between Sec. W & stem =	60		
..... Sec. 27 & stern =	23		
			8105
			2
Total Displacement	16210		

Having thus found the number of cubic feet which the immersed part of the vessel ought to displace, we must multiply it by the number of pounds contained in one cubic foot of water, and the product will be the weight which the vessel fully equipped and armed ought to possess in order to fulfil the condition of its being immersed in the fluid to the depth of that which we have assumed as the line of floatation, A B. If the actual weight of the ship, which is of course known, be greater or less than the product, that line will not be its true line of floatation, and if it be desired to know that which really will, it is only necessary to reduce the

excess or deficiency of that weight to the denomination of cubic feet of volume, which is easily accomplished in dividing that difference by the number of pounds contained in a cubic foot of water; and then to divide the number of cubic feet thus found, by the area of the plane of floatation A B. The result will give the quantity by which the true line will be more or less elevated than the line A B. This operation is founded upon the fact, that the vessel ought to be immersed, more or less, and consequently, displace a new volume, greater or less than that which we have obtained, by a quantity equal to a portion of the fluid, whose weight is the difference of the weight of the ship, and that of the displacement calculated. But the base of this displacement is the section or plane of floatation A B, and its altitude is the quantity expressing the greater or less depth to which the vessel ought to sink. Therefore, dividing the volume of difference by the area of the plane of floatation, the quotient will be the difference of elevation between the real and assumed lines.

## CHAP. II.—THE CENTRE OF GRAVITY OF THE DISPLACEMENT.

Having thus given a method of ascertaining the displacement, our next object will be to find the centre of gravity of that displacement, both in relation to its length and breadth. The position of this point, as regards its distance from the plane of floatation, greatly affects the stability, and its situation in reference to the middle of the length, influences the sailing properties of a ship. We, therefore, proceed, first, to find the centre of gravity of the plane A H O G, FIG. 1, PL. 1.

The centre of gravity of the parabolic segment, H I K R II, is evidently in the line I R, and its distance from the line A H is = A B = M. The distance of the centre of gravity of the rectangle A H P C, from the same line is = m, and that of the triangle H K P is =  $\frac{2}{3} A C = \frac{4}{3} m$ . The distance of their common centre of gravity is equal to the sum of their momenta, or products of their areas multiplied each by the distance of its centre of gravity from A H, divided by the sum of those areas. Hence the distance of the centre of gravity of A H K C, from A H is  $\frac{a. 2m. m + (c-a). m. \frac{4}{3} m}{(a+c)m} = \left(\frac{a+2c}{a+c}\right) \frac{4}{3} m$ , and therefore the momentum of the trapezoid in relation to the line A II =  $\left(\frac{a+2c}{a+c}\right) \frac{4}{3} m \times (a+c)m$

$= (a+2c) \frac{4}{3} m^2$ . The area of the parabolic segment H I K R II =  $(2b-a-c) \frac{4}{3} m$ , and its momentum in relation to A H, therefore  $= (2b-a-c) \frac{4}{3} m^2$ ; adding together then this momentum, and that of the trapezoid, and dividing the sum by the area of the whole A H I K C, the quotient will be the distance of the centre of gravity of that space from the line A H

$$= \frac{(a \times 2c) \frac{4}{3} m^2 + (2b-a-c) \frac{4}{3} m^2}{(a+4b+c) \frac{4}{3} m} = \left(\frac{4b+2c}{a+4b+c}\right) m$$

In like manner the distance of the centre of gravity of C K L M N E from the line C K =  $\left(\frac{4d+2e}{c+4d+e}\right) m$ , and from A H =  $\left(\frac{4d+2e}{c+4d+e}\right)$

$m + 2m = \left( \frac{2c + 12d + 4e}{c + 4d + e} \right) m$ ; and that of from A E =  $\left( \frac{4e + 20f + 6g}{e + 4f + g} \right) m$ . By the same rule, the distance of the centre of gravity of E M N O G from E M =  $\left( \frac{4f + 2g}{e + 4f + g} \right) m$ , or these three spaces, or of A H O G

$$\begin{aligned} & \frac{(4b + 2c) \frac{1}{2} m^2 + (2c + 12d + 4e) \frac{1}{2} m^2 + (4e + 20f + 6g) \frac{1}{2} m^2}{(a + 4b + 2c + 4d + 2e + 4f + g) \frac{1}{2} m} \\ &= \left( \frac{4b + 4c + 12d + 8e + 20f + 6g}{a + 4b + 2c + 4d + 2e + 4f + g} \right) m. \\ &= \left( \frac{0. a + 1. 4b + 2. 2c + 3. 4d + 4. 2e + 5. 4f + 6. g}{a + 4b + 2c + 4d + 2e + 4f + g} \right). \end{aligned}$$

The numerator of this expression contains the same functions of the ordinates as the denominator, or the same as the formula for the surface of the plane; but they are also multiplied respectively by the natural numbers, 0, 1, 2, 3, 4, &c. Hence the distance of the centre of gravity of a plane from the line which bounds it, is found by means of the expression for the area of that plane; in multiplying the function of the first ordinate by 0, that of the second by 1, of the

=  $(c^2 + 4b^2 + a^2) p \frac{1}{3} NH$ , and that of S R V =  $(a + 4c^2 + a^2) p \frac{1}{3} m$ , therefore the distance of the centre of gravity of M P R V, from the plane M P =  $\left( \frac{0. c^2 + 1. 4b^2 + 2. a^2}{c^2 + 4b^2 + a^2} \right) NH = \left( \frac{4b^2 + 2a^2}{c^2 + 4b^2 + a^2} \right)$

N H; and that of the solid S R V from the plane which passes through S N

$$= \frac{(0.0 + 1. 4c^2 + 2. a^2) \frac{1}{2} m}{(a + 4c^2 + a^2)} = \frac{(4c^2 + 2a^2) \frac{1}{2} m}{4c^2 + a^2}.$$

If the solid be a cone,  $a^2 = 4c^2$ , and the distance is =  $\frac{3}{4} m$ ; if a paraboloid  $a^2 = 2c^2$ , and the distance becomes =  $\frac{3}{2} m$ ; results which agree with those obtained by ordinary means. To apply this principle to bodies whose generating line does not commence from the axis, we must recur to the expression for the solidity of such bodies. The functions of the ordinates which enter into this expression, are  $f^2$ ,  $4c^2$ ,  $a^2$ , and multiplying these by 0, 1, 2, we shall have the distance required =  $\left( \frac{4c^2 + 2a^2}{f^2 + 4c^2 + a^2} \right) \frac{1}{2} m$ .

If the solid be a cylinder, all these sections or ordinates being equal, we have  $c^2 = f^2 = a^2$ , and  $4c^2 = 4a^2$ , consequently in that case, the expression becomes =  $\frac{1}{2} m$ .

To find then the centre of gravity of the displacement, we must commence by ascertaining the distance of the centre of gravity of the portion included between the two extreme sections, from one of those sections, that marked 27 for example, in the following manner. Multiply the functions of the area of each section, (or the values which we have termed products in Table II.), the first, or that of the area 27 by 0, the second by 1, the third by 2, &c.; divide the sum of these products by the sum of the areas of the sections, and the quotient multiplied by the common distance between the sections, will give the distance required. The respective centres of gravity of the portions comprised between the section 27 and the stern, and that marked W and the stem must then be found; and subtracting from the sum of the moments of the portions contained between the two extreme sections,

third by 2, of the fourth by 3, &c.; in dividing the sum of these products by the area, and then multiplying the quotient by the distance between the ordinates, the result of which will give the distance of the centre of gravity of the plane from its first ordinate. Our next object is the application of this principle to finding the centre of gravity of solids. We have seen that the solidity of the body M P R V, FIG. 2.

and of that contained between the section W and the stem in relation to the section 27, the moment of the part comprised between that section and the stern, divide the remainder by the whole displacement, the quotient will be the distance of the centre of gravity of that displacement from the section 27; whence may easily be found its distance from the midship or any other section. In like manner must be found the distance of that point from the upper line of floatation; with this difference, that instead of employing the areas of the sections, we must make use of those of the different planes of floatation, and the common distance  $m$  must be not that of the sections but of those planes. The same ordinates by means of which we found the areas of the sections, will also serve to enable us to ascertain those of the planes of floatation, but employed in a contrary order. Having found the centre of gravity of the portion included between the upper and lower planes of floatation, the moment of that portion must be added to that of the volume contained between the lower plane of floatation and the keel; the sum divided by the whole displacement will give the distance of the centre of gravity of that displacement from the upper plane of floatation, and as its distance from one of the extreme sections has been already ascertained, the position of the point is determined.

### CHAP. III.—OF THE STABILITY OF SHIPS.

A floating body is impelled downward by its weight acting in the direction of a vertical line

passing through the centre of gravity of its entire bulk; the pressure of the fluid by which the solid is supported, acts upward in the direction of a vertical line called the line of support or the line of buoyancy, which passes through the centre of gravity of the part immersed, or as it may otherwise be termed the centre of buoyancy, or the point in which we may conceive the buoyancy or action by which the body is sustained to be concentrated; unless, therefore, these two lines are co-incident so that the two centres of gravity may be in the same vertical line, the floating body thus impelled by forces, acting in parallel and contrary directions, must revolve on an axis until it find a position in which it will be at rest. To ascertain when this will be the case, it is necessary to find the proportion of the immersed part to the whole, and it must then be determined by geometrical or analytical methods in what positions the solid can be placed on the surface of the fluid, so that the two centres of gravity already mentioned, may be in the same vertical line when a given part of the solid is immersed under the surface of the fluid. These particulars having been determined, evidently reduce the statement of the problem to a narrow compass, but they alone are insufficient to limit it; for although it has been shown that a body cannot float permanently on a fluid unless the two centres of gravity are situated in the same vertical line, it does not follow that whenever those centres are so situated, the body will float permanently. Positions may be assigned in which the conditions in question are fulfilled, yet, in none of which will the solid rest, but on the contrary, assume some other, in which it will continue permanently to float. Thus, if a cylinder, having its specific gravity to that of the fluid on which it floats, as 3 to 4, and its axis to the diameter of its base as 2 to 1, be placed on the fluid with its axis vertical, it will sink to a depth equal to a diameter and a half of the base; and while its axis is preserved in a vertical position by external force, the centres of gravity of the whole of the part immersed will remain in the same vertical line: but when the external force that sustained it is removed, it will decline from its upright position, and will permanently float with its axis horizontal. If the axis be supposed to be only one-half instead of twice the diameter of the base, and be placed vertically, the cylinder will sink to the depth of three-eights of its diameter, and in that position will float permanently. Even if the axis be placed not exactly coincident with the vertical direction, but in a line somewhat inclined to it, the solid will change its position until it settles permanently with the axis perpendicular to the horizon. Whether, therefore, a solid floats permanently, or oversets when placed on the surface of a fluid, provided the centre of gravity of the whole, and that of the part immersed, be in the same vertical line, it is said to be in a position of equilibrium; and of this equilibrium there are three species, viz. the equilibrium of stability, instability, and the equilibrium of indifference, or the neutral equilibrium. If the figure and position of the solid be

such, that upon a slight change, by which it still displaces its own weight of fluid, its centre of gravity takes a higher position than it had when in equilibrium, then the solid will float permanently in that position, and that equilibrium will be stable; because the centre of gravity having always a tendency to descend, will return to its former position, and will oscillate from side to side of it until the solid by its friction with the fluid at length attain a state of rest. If on the other hand, a slight disturbance, which still causes the solid to displace its own weight of liquid, make the centre of gravity take a lower position, the body will not return to its former position of equilibrium, nor will it oscillate from side to side of that position, as in the former case; for to do so it would be necessary that the centre of gravity should ascend, an effect which is contrary to its characteristic property. The centre of gravity will, therefore, continue to descend until it gets into another position, such that the line joining it with the centre of gravity of the part immersed, shall be perpendicular to the surface of the fluid. Any disturbance from this position must necessarily cause the centre of gravity to ascend, and the position is, therefore, that of stable equilibrium.

The shape and position of the body may be such that whatever be the position in which it displaces its own weight of the liquid, the elevation of its centre of gravity will be the same; in other words, any motion which it may receive, allowing it still to displace its own weight of liquid, will cause its centre of gravity to move in a horizontal plane, and as in this case the centre of gravity neither ascends nor descends, it will rest in equilibrium in all positions. Such is the state of indifferent, or neutral equilibrium.

When a solid body floats permanently on the surface of a fluid, and external force is applied to incline it from its position, the resistance opposed to that inclination is termed the stability of floating. It is obvious that some floating bodies are more easily inclined from their quiescent position than others, that after having been inclined, some will return to their original situation with more force and celerity than others; a difference which is particularly observable in ships at sea, in some of which a given impulse of the wind will cause a much greater inclination from the perpendicular than in others. To be enabled to resist this inclination, or, in other words, to possess a certain degree of stability, is one of the most indispensable properties of a ship; and, consequently, several eminent mathematicians have investigated rules for determining its amount from the known weight and dimensions of a ship, independently of any recurrence to actual trial. This is effected in a very simple and elegant manner by the metacentric method of Bouguer, which infers the force or measure of the stability from the relative positions of the centre of gravity of the vessel, and a point termed the metacentre, which is obtained as follows:—

Let W A T B F (Plate 1, Fig. 4), be a vertical section of a ship, floating in equilibrium, passing

through its centre of gravity; let A B be the upper line of floatation, or water line, G the centre of gravity of the whole body, and D that of the immersed part, A' T B. Suppose the vessel now to receive a very small inclination, by which A' T B' becomes the immersed part, and D' its centre of gravity. From D' draw D M perpendicular to A B, and meeting D G, produced if necessary in M. If the point M thus found be higher than G, the centre of gravity of the whole body, the vessel will, when the inclining force is removed, return to its former position. If it coincide with G, the vessel will remain in its inclined state: but if it be below G, the inclination will continually increase, until the vessel be entirely overset. That point of intersection M, is called the metacentre, and is the limit of the altitude of the centre of gravity of the vessel. Hence it must be evident that the stability of a ship increases with the elevation of the metacentre above the centre of gravity; and that, if those two points coincide, the ship will have no disposition whatever to move out of the situation into which it may be placed, but will rest on the fluid, indifferent to motion, without tendency to right itself when inclined, or to incline itself further. In this case she would therefore be unable to carry sail, and, consequently, totally unfit for the purposes of navigation. Thirdly, if the metacentre be below the centre of gravity, the vessel will instantly overset. The force of the stability is therefore measured by the height of the metacentre above the centre of gravity; and a mode of ascertaining the exact measure of that force is given by Bouguer; our limits, however, necessarily preclude us from continuing the subject so far, and we shall therefore pass to the more rigorous and general, though at the same time more laborious method of Atwood, for effecting the same object. The theorem which we have given above is in one respect general, not being confined to bodies of any particular form; but, in respect to the angles of inclination, it is restrained to the condition that the deflection from the quiescent position shall be evanescent, or, in a practical sense, very small. In consequence of this restriction the rule in question cannot be generally applied to ascertain the stability of ships at sea; because the angles to which they are frequently inclined being of considerable magnitude, the stability will depend not only on the conditions which enter into Bouguer's solution, but also on the shape given to the sides of the vessel above and beneath the water line, of which he takes no account. Notwithstanding its long calculations, then, it cannot be for one moment doubted that the method of Atwood is greatly superior, and we shall therefore give a brief account of it.

Let W A T B F (Fig. 4) be a vertical section of a vessel floating in the upright position, and at rest, and let A B be its water-line. Suppose another plane to be at right angles to the plane of the section, W A T B F, and divide it into two equal and similar parts in the vertical line, M T, the common section of this last-mentioned plane, with the water's surface, will be a line at right angles to the section W A T B F, and cut-

ting it in the point S. Let us imagine, for the sake of simplicity, that the body of the vessel has been generated by the invariable section W A T B F, moving parallel to itself on the common section of the water's surface and longitudinal plane, passing through M T: moreover, suppose that an equal solid is formed in this way, on each side of the plane, W A T B F. It is clear that the centres of gravity of the vessel, and of the displacement, are in this plane, W A T B F, and both in the vertical line M T, since the body is at rest: let these two points be G and D respectively. Now, supposing the length of the uniform solid, of which the area, A T B (cut off by the line A B) is the base, to be represented by  $l$ , we have the volume of the displacement equal to the area A T B.  $l$ . Suppose the vessel to have been inclined round the longer axis, so that the points B' and A', of the section W A T B F, are coincident with the water's surface, the line joining A' and B' cutting the line A B, in some point S: it follows that there is a solid *emerged*, of which the area A S A', is the base, and another *immersed*, of which the area, B S B' is the base; the new displacement being equal to the area A' T B'.  $l$ . But as the weight of the vessel is the same both before and after the inclination, the two volumes, of which the areas A T B, and A' T B', are respectively the bases, must be equal; and as the volume, whose base is the area A' T B', is common to both, the volumes *immersed* and *emerged* must also be equal. The centre of buoyancy corresponding to the inclined position of the vessel remains on the plane W A T B F, since there is still an equal and uniform volume on each side of it; for the like reasons, the centres of gravity of the volumes *immersed* and *emerged* must be in the same plane. Let the new centre of buoyancy be in the point D', and draw D'M, perpendicular to the water's surface, A' B'; from G draw G P, parallel to A' B'; then will G P be the perpendicular distance from G to the line of support, in which the buoyancy of the water is supposed to act; hence, when the weights and therefore the displacements of different vessels are equal, the stability will be measured by the magnitude of the line G P; but when this is not the case, the stability will be truly estimated by the quantity G P. W; where W = the weight of the vessel with its entire equipment. The quantity G P. W, is called *the moment of stability*.

The analytical value of G P. may be thus obtained; let R and V be the centres of gravity of the volumes of immersion, and from these points draw R N and V L perpendicular to A' B': also draw D Q parallel to A' B', meeting D' M in Q. It is evident from the preceding article, that the volume of emersion = area A S A'.  $l$ , and, conceiving it to be concentrated in the point R, we may imagine that it is transferred to the centre of gravity V of the volume of immersion; this transfer will, by a well-known property of the centre of gravity, cause the point D to move through a space (in a direction parallel to the line joining the points R and V) reciprocally proportional to the magnitudes of the A S A'.  $l$ , and A T B.  $l$ ; and since the motion of the centre of gravity of the volume of emersion is estimated,

in a horizontal sense, by the line N L, and that of the centre of buoyancy in the same direction by the line D Q, we have, by putting N L + b, this proportion—

(1.)  $b : DQ = \text{area } ATB : \text{area } ASA$ , l, or  
(2.)  $b : DQ = \text{area } ATB : \text{area } ASA'$

and putting area  $ATB \cdot l = V$  and area  $ASA' \cdot l = A$ , we derive the equation  $DQ = \frac{bA}{V}$ . It is

seen from proportion (2), that when the vertical sections made at right angles to the longer axis, are equal and similar, the lines N L and D Q are proportional to the simple areas  $ATB$  and  $ASA'$  which may therefore be taken, in this case, to represent the volumes of displacement and of emersion or immersion respectively. But if the body be of an irregular form, the construction and demonstration will be precisely similar to that above, supposing the section W A T B F to pass through the centre of gravity of the body, and the following modifications of expression taking place; viz., the volumes of displacement, immersion, and emersion, must be obtained by calculations founded on their shape and dimensions, as also the positions of the centres of gravity of the same volumes. We may therefore

assume the expression  $DQ = \frac{bA}{V}$  as general.

Draw G C parallel to M D', then will the angle D G C be equal to the angle of inclination B S B'; putting  $G D = d$ , and sine of the angle B S B' = s, we have  $D C = d s$  and  $G P = D Q - D C = \frac{bA}{V} - d s$ , or  $G P \times V = bA - d s V$ .

We may infer from the above expression that whatever form the volume whose base is the area  $A' TB$ , may assume, provided the distance between the points D and G is not affected thereby, and the whole volume of displacement remains the same, the stability will depend on the configuration of the vessel being unaltered in those parts *immersed* and *emerged* by the inclination; for the term  $bA$  of the expression will then experience no change, whilst  $V$  is constant, and the quantity,  $d$ , kept unchanged by means of ballast or other expedients; consequently the stability of the vessel will remain the same. It is also seen that the space  $DQ$ , moved through by the centre of buoyancy, varies directly as  $bA$ , and inversely as  $V$ ; and if two vessels, of different forms and displacements, have the centres of gravity and of buoyancy coincident in each, their stabilities will be measured by the value of  $\frac{bA}{V}$  in both.

It is evident from the preceding general investigation of the equilibrium of stability, that to give a vessel a certain inclination, and to keep it to that inclination, we must employ a power whose moment, with regard to the centre of gravity of the vessel, is equal to the moment of stability. When the inclining force is supposed to vary in quantity, or in the point of application, greater or less inclinations will be produced, and maintained according as its moment is greater or less. If the inclining force cease, the force of stability immediately operates to restore the vessel to the upright position, and continuing to

act at every successive decreasing angle, it will produce an accelerated rotatory motion about an horizontal axis passing through the centre of gravity, until the vessel arrives at the upright position. The angular motion by this time generated in the body will then cause it to pass this position, and incline it on the other side, till such motion is destroyed by the force of stability again called into action, but which is now a retarding force instead of an accelerating one. Thus, the first half of a vibration will be accelerated, and the second half retarded by the force of stability. The species of vibration spoken of here, constitutes what is usually termed *the rolling*; and we may observe, that the force of stability which tends to produce it should be regulated with the angle of inclination, so as to prevent too rapid or sudden a variation in the angular velocity; otherwise the ship will be subject to violent and percussive action when brought to her bearings.

In the Philosophical Transactions for the year 1798, Atwood has exhibited the comparative stability of a variety of known geometrical forms; but the analysis used by him in the investigation of the problems is by no means so concise and general as could be wished, as he treats each case separately, and in a manner both tedious and laborious. The several cases which he considers are—

*First.* When the sides of a vessel are parallel to the plane of the masts both above and below the water-line.

*Second.* When the sides fall outwards, at equal angles above, and are parallel to the plane of the masts, under the water-line.

*Third.* The sides incline inwards, at equal angles above, and are parallel to the masts, under the water-line.

*Fourth.* The sides fall outwards, both above and beneath the water-line, at equal inclinations to the plane of the masts.

*Fifth.* When the sides incline inwards, and are at equal angles of inclination to the plane of the masts, both above and beneath the water-line.

*Sixth.* The sides coincide with the sides of an isosceles wedge; meeting, if produced, at a point beneath the water's surface.

*Seventh.* The sides are coincident with the sides of an isosceles wedge; meeting, if produced, at a point, which is above the water's surface.

*Eighth.* The sides of a vessel are parallel to the masts above, and incline outwards, beneath the water-line, at equal angles.

*Ninth.* The sides are parallel to the masts above, and are inclined inwards, at equal angles, below the water-line.

*Tenth.* The sides of a vessel are coincident with the surface of a cylinder; the vertical sections being equal circles.

*Eleventh.* The vertical sections of a vessel are terminated by the arcs of a conic parabola.

And lastly, the case of a vessel of the usual form, in which all the vertical and horizontal sections are not as they are in the above eleven cases, equal and similar. For the application of the general expression to these several cases we

must refer our readers to the original paper of Mr. Atwood above referred to.

#### CHAP. IV.—OF THE CENTRE OF GRAVITY.

The knowledge of the position of the centre of gravity of a ship, its contents is a point of the greatest importance. It may be admitted as an axiom, that a body put in motion revolves round its own centre of gravity while uninterrupted by any external force, and that the force which imparts that motion does not cause it to revolve about any other point. The centre of gravity is, therefore, the centre of rotation in a ship, and the point to which the different motions of rolling and pitching must be referred. We may also see by a simple inspection of the general expression which we have obtained for the stability, that the determination of the centre of gravity is indispensably necessary in order to ascertain the measure of that force, which consists in fact, in finding the distance of the vertical central line of buoyancy from the centre of gravity. The position of this point may be ascertained by considering the ship as composed of a system of bodies, and finding the common centre of gravity, in the usual manner. Thus the momentum of every part of the ship and its contents, must be found separately, both in relation to a horizontal and a vertical plane. The sums of these two momenta, being divided by the weight of the ship, the quotients will be respectively, the altitude of the centre of gravity, and its distance from the vertical plane; and as this centre is in a vertical line passing through the axis of the keel, its position is therefore determined. This operation has been performed on only two ships in this country, the Bulwark and the Ajax; the position of the centre of gravity of both of which was ascertained at the school of Naval Architecture, under Dr. Inman, in 1817. The great objection to this method is, that the operation is exceeding long and laborious, when every component element is taken into account; for each of the above ships it occupied two persons a whole year, independent of the assistance of labour in weighing many of the component articles, as stores, blocks, &c.

It becomes then an object of considerable importance to find the position of the centre of gravity of a ship, without regard to the specific circumstances of each component weight of its entire substance. This has been effected by the eminent Spanish author, Don Jorge Juan, and the Swedish architect, Chapman, both in a similar manner, and by means of an experiment on the ship. Their method consists in removing the artillery and component weights of the ship from one side to the other, and by this means inclining it so as to elevate and expose a portion which is ordinarily submerged; and by means of a formula previously obtained, the distance of the centre of gravity from the metacentre is then found. Chapman's mode has, however, two objections which attach to it. In the first place, he uses the metacentre as a measure of stability at an angle of  $8^{\circ}$  or  $10^{\circ}$ , which is decidedly erroneous; this is, however, easily corrected by sub-

stituting Atwood's equation; but, secondly, he appears to have entirely overlooked the change of place which the centre of gravity undergoes by the transfer of the guns from one side to the other. These are, however, altogether obviated in a method recommended first, we believe, by Mr. Major, which is as follows:—Let the ship be heeled to the same angle by two separate horizontal forces applied at different heights in the plane of the masts. It is evident that their moments of inclining power must be equal, since they are both sustained by the same force of stability. Let  $P$  represent one power, and  $p$  the other; and let  $a$  and  $b$  be respectively their distances of action from the centre of gravity of the displacement. Put  $x$  for the distance of the centre of gravity of the ship from that point, and let  $A$  be the angle of inclination of the ship from the upright. We shall have then the following equations of their forces, the radius being always unity.

$$\begin{aligned} P(a-x) \cdot \text{Cos. } A &= p(b-x) \cdot \text{Cos. } A \\ Pa - Px &= pb - px \\ x &= \frac{P a - p b}{P - p} \end{aligned}$$

From which we obtain the following rule. Divide the difference of the momenta of the inclining forces by the difference of the same forces, and the result will be the distance of the centre of gravity of the ship from the centre of gravity of the displacement.

Let us now examine the effect which the force concentrated in this point produces on the rolling and pitching of a ship. Let A D B (fig. 5), be the section of a vessel whose line of floatation is A B; let E be its centre of gravity, and G the metacentre. Suppose a force at B to act on the side of the vessel in the direction of B H, so as to give it the inclination  $a b$ . The momentum of the force which produces that inclination is as the distance E H, and the momentum of that which tends to cause the vessel to return to the upright position, is as the distance E G; as these forces act in contrary directions, there results a motion termed rolling; and the effect of the forces producing it is as the sum of E H and E G. But the vessel during the inclination, must revolve on its centre of gravity, and its displacement must be the same as when it is upright; therefore, the vessel, and consequently its centre of gravity E, must be elevated a certain distance  $e E$  equal to the versed sine of the angle G e g, the radius being E G. It follows, therefore, that when the force which operated to produce the inclination ceases, the vessel will descend with its whole weight, in a vertical direction from  $e$  to E, with a force continually accelerating until the action of the buoyancy of the water ceases to operate upon the point G, and as the inclination extends frequently to an angle of  $30^{\circ}$ , the distance  $e E$  becomes considerable, and consequently the rolling very quick. If the centre of gravity E of the ship were in the plane of floatation, and the distance E G still the same as above, the motion would be less and easier than when that point is situated lower; for in the first

place the distance E H would be less, and the inclination produced by the force at B acting in the direction B H, would not be so great as if the centre of gravity were lower since the sum of F G and E H would be less; and secondly, the centre of gravity being in the plane of floatation, the vessel is capable of a rotatory motion without itself or its centre of gravity being elevated or depressed, and, therefore, without causing the concussion to which we have alluded. Hence we may conclude, that the motion of rolling is more uniform and less exposed to sudden concussions, when the centre of gravity is in the plane of the water section or near it, than elsewhere; and as this position of the centre of gravity has the same effect upon the pitching, or a vibratory motion of a ship about a horizontal transverse axis, it follows that it ought to be there placed. But it is a matter of exceeding difficulty to construct a vessel which shall possess the requisite degree of stability, and at the same time roll easily for the increase of the distance E G, which augments the stability, contributes also to increase the motion of rolling; and the difficulty becomes still greater in the case of merchant ships where the object is to combine economy of construction with a capability of carrying the greatest possible burthen. A vessel of this nature should be built very broad in its bottom, and should be elevated above the water but very little in proportion to its breadth; consequently it must have the centre of gravity of its displacement, and, therefore the metacentre situated very low. In order to give it stability, it becomes necessary then to place the centre of gravity of the cargo as low as possible, and thus the common centre of gravity of the ship and cargo is situated exceedingly low, and occasions the motions of rolling to be very uneasy.

The preceding remarks apply to the situation of the centre of gravity with reference to its altitude only; it remains, therefore, to consider its position in relation to the length, as it affects the motion of pitching, or the alternate elevation and depression of the two extremities of the vessel. This motion results entirely from the action of the waves; thus, when a wave has passed the fore-part of a ship and arrived towards the middle, it leaves a great cavity under the stem where the ship is entirely unsupported; that portion, therefore, descends with a certain momentum, which is the product of its component weights, multiplied by their distance from that point where the vessel is really supported. This kind of motion is much greater in vessels which are very full and broad, both fore and aft, towards the water line, and which slope considerably beneath; but, if the weights in the fore-part be transferred nearer to the middle, the momentum with which the elevated portion of the ship descends would be lessened, and not only would the motion become easier, but the waves would have less difficulty in raising it. The same observation applies to the after-part of the ship, and we, therefore see that to diminish the motion of pitching, the weights should be brought towards the middle, in which position, we may hence conclude, the centre of gravity ought to be in relation to the length.

## CHAP. V.—ON THE RESISTANCE OF THE WATER.

When the body is moved through a fluid, such as water, a force is required to overcome the resistance thereof. The same, or a similar force, is required to retain a body at rest, floating in a fluid in motion; in either case the fluid heaps up, or accumulates, in front of the floating body, until the increasing pressure in all directions produced by this accumulation is sufficient to remove sideways that portion of the fluid intercepted by the floating body, and which afterwards falls into the general current. The effect of this accumulation on the bows has been called the *plus pressure*. Again, the fluid, after passing, will require some time and force to fall in towards the after part or stern of the floating body: this deflection is also caused by some force or hydrostatic pressure, viz. by the water at the stern being somewhat below the level of the passing stream. A portion of the stern, therefore, is not pressed upon by the same force as the bow, even reckoned from the general level of the stream, and independently of the accumulation at the bow; and, therefore, this depression increases the power or resistance of the fluid, by a quantity which has been called the *minus pressure*, or stern resistance. Lastly, the fluid in passing along the side of the floating body is subjected to a certain degree of adhesion or friction, which increases with the extent of surface.

According to the common theory of the impulse of fluids, it is assumed that each particle of the fluid in motion will strike a solid body in its path in the same manner, and with the same force, as in the collision of hard bodies in free space; therefore since the number of particles striking in a given time will be as the velocity, and the force of each particle also proportional to the velocity, we have—

1st. The resistance or impulse is as the square of the velocity.

2nd. The number of particles, and consequently the resistance, will be as the density of the fluid and the magnitude of the surface impinged on.

Again, in oblique impulses, let A B (FIG. 6), be the plane exposed to direct impulse  $f'A, f'B$ ; and BC the same plane exposed to oblique impulse in the same fluid. The number of particles intercepted by BC, will be only as DB or CE, that is the sine of the angle of incidence O x B; but also the perpendicular action of each particle  $o$ , as  $Om$ , will be diminished in the ratio of  $om$  to  $an = BC : CE$ , that is, as the sine of incidence; so that we have,

3dly, The direct resistance or impulse is to the oblique effective impulse as the square of radius to the square of the sine of incidence.'

From these principles Newton determined that the impulse on a cylinder is  $\frac{2}{3}$  that on the transverse section through its axis, and that the impulse on a sphere is  $\frac{1}{2}$  that on its great circle.

In like manner, from the same principle, it has been deduced, that the resistance or direct impulse of an inelastic fluid on any plane surface is equal to the weight of a column of the fluid whose base is equal to the surface struck,

and height equal to twice the fall required for producing a velocity equal to that with which the plane moves in the fluid. In elastic fluids the impulse is double of the above (*Principia*, vol. ii. p. 35—38). It does not, however, appear that the theory of resistance here given, from Newton's investigations, is at all accordant with experiments; but, since we have as yet no better to direct our researches, we may endeavour to modify it only so far as the numerous experiments made on the subject may require. In fact, the action of a fluid on any solid body cannot at all be considered as that of a number of hard particles striking it, and then thrown off into free space; for the mobility of the fluid, and the property it possesses of rising above the level, (if like water), or of being compressed, (if like air), gives it all the properties of an elastic body, and makes its action on the solid that of a simple pressure, the amount of which may be readily measured by that accumulation. This accumulation becomes, in its turn, a moving power, impelling the parts of the fluid below it to escape in all directions, and of course communicating a motion transverse to the general direction of the stream, or rather, perhaps, along the surface of the fluid, and with an increased velocity. The figure of that surface, and its adaptation to the natural path, followed by the filaments of water in passing round and closing in behind the body, greatly affect the observed resistance.

With respect to the agreement of experiments with the above principles, it has been found that the resistance increases nearly as the square of the velocity, little deviation appears in the smaller velocities, and Newton has shown, that by subtracting a certain uniform quantity for the adhesion of the fluid, the remainder agreed exactly with the theory; and that in the greater velocities there is a deviation arising from the inertia of the fluid which accumulates in front, and is rarefied or depressed behind the body.

According to Borda's experiments the resistance to the surface of

	Ratio of Theory to Experiment.
2° or 9 inches, being	9 = 1 : 1
4° or 16 — was	17.535 = 1 : 1.096
6° or 36 - - -	42.750 = 1 : 1.168
9° or 81 - - -	104.737 = 1 : 1.294

In larger surfaces, the deviation would probably be much greater, as the smaller afford greater facility of escape.

It appears from the experiments of Mr. Robins, that the resistance of a square foot of air moving with the velocity of one foot per second on 16 inches, is - - - .001596 lbs.

By Borda's experiments the re-

sistance on 16 inches is - - - .001757 lbs.

On 81 inches - - - - - .002042 lbs.

Bouguer has calculated that the impulse of sea-water, with a velocity of 1 foot per second, is 23oz. on a square foot, French measure, and that of wind is the same when blowing 24 feet per second. This last velocity would rather be  $\sqrt{900} = 30$  feet, if we were to take the density of the air to determine it.

The experiments of the French Academy make the resistance to a square foot moving 2·56 feet per second, to be 7·625lbs.; or, in English maxims, 1·136 square foot moving 2·7263 feet per second, gives a resistance of 8·234lbs. avoird., which is nearly the weight of a column of water of this base, having its height equal to the fall necessary for communicating this velocity, and only  $\frac{1}{2}$  the resistance assigned by the Newtonian Theory. If we calculate from the last number, the impulse on 1 square foot moving 1 foot per second, we have 0·973lbs. avoird. Much, however, depends on the form and situation of the adjoining parts. The experiments of the academy were made on a prism, or box, 2 feet square, and 4 feet long. The resistance on a thin board, of the size of the end of this box, would have been greater. Thus, according to Buat, the resistance on a square foot, wholly immersed in a stream, was,

A square foot as a thin plate	- - -	1·81 lbs.
Ditto, as the front of a box 1 ft. long	- - -	1·42
Ditto, as ditto, 3 feet long	- - -	1·29
Sea water about $\frac{1}{25}$ greater.		

The resistance to sailing vessels is, therefore, considerably less in the direction of their length than in that of their breadth, upon equal portions of surface, while the resistance to their surface of sail or an oar is the greatest possible. Both these properties are to be appreciated.

We may, therefore, assume that the resistance of water in sailing vessels is about 1·5 lb. per square foot, moving 1 foot per second, and that the impulse on a sail is .002 lb., or  $\frac{1}{500}$  lb. for the same surface and velocity; proportions not very distant from that of their relative densities, when modified as before mentioned.

If we estimate the resistance for a velocity of 1 nautical mile per hour, we shall have air per square foot .005 lb., and water per square foot 4·17 lb.

However, the bows of vessels are never made square, and the sails are most frequently placed obliquely. Theory, in this instance, appears at variance with experiments. The best experiments hitherto made in this department of our subject are those of the French Academy. A box, of 3 feet square and 4 long, was made and fitted with prows of a wedge-like form, the angles of which varied by 12° in each set of experiments from 12° to 180°, so that the angles of incidence varied 6° from each other. These boxes being immersed 2 feet in a large basin of water, were drawn obliquely by a line and weights, the motion after a little time becoming very uniform. The time of passing over 96 French feet was then carefully noted, and the resistance calculated from the weight employed, after deducting a certain quantity for friction and the accumulation of water on the anterior surface. The following table exhibits the result of these experiments. Col. 1 is the angle of the prow; col. 2, the angle of incidence; col. 3, the observed resistance; col. 4, the resistance calculated from col. 1, as the squares of the sines of incidence; col. 5, the same reduced as the sines only of incidence.

TABLE III.

Angle of Prow.	Angle of Incidence.	Impulse observed.	Square of Sine.	Sine only.
180°	90°	1000	1000	1000
168	84	989	989	995
156	78	959	957	978
144	72	908	905	951
132	66	845	835	914
120	60	771	750	866
108	54	693	655	809
96	48	615	552	743
84	42	543	448	669
72	36	480	346	587
60	30	440	250	500
48	24	424	165	407
36	18	414	96	309
24	12	406	43	208
12	6	400	11	105
1	2	3	4	5

The error of the theory is as important in the action on *sails*; for the experiments of Borda and Robins on the oblique impulse of air are very conformable to those of the Academicians on waters, and the neat experiments of the Society for Naval Architecture exhibit similar results. We may therefore observe, that the oblique impulse of the wind is much more efficacious in preserving the ship in the direction of the course than they would suppose; and, in the same manner, the oblique action of the water is more efficacious in resisting lee-way.

From the experiments of the Society for the Improvement of Naval Architecture, it would appear, that in the ordinary velocities, the total resistance of sharp-ended vessels is little more than one-third of those with square ends. The impression of the wind being at the same time more, we are justified, at least, in calculating for velocities of five miles per hour, or upwards, in assuming a pressure of only five pounds per square foot of the cross section of the vessel for a velocity of one foot per second.

#### CHAP. VI.—POWER OF SAILS.

From the preceding data we may proceed to calculate the rate at which a vessel may pass through the water, her own dimensions, and those of her sails being given.

Case 1. The ship sailing before the wind; let the breadth =  $b$ , draft of water =  $d$ , the area of sail =  $a$ . Let  $p$  = the pressure of the wind at one foot per second,  $q$  = pressure of water on one square foot at one foot per second,  $w$  = velocity of the wind,  $v$  = velocity of the ship passing through the water.

The ship sailing before the wind, we have the velocity with which the wind strikes the sails =  $w - v$ , and the impulse on the sails =  $w - v$   $\cdot p a$ . The resistance of the water on the ship will be  $b d q v^2$ . Hence, when the motion has become uniform, we have,

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$$\begin{aligned} \frac{-v}{w} \cdot p a &= b d q v^2 \\ \therefore w &= v + v \sqrt{\frac{b d q}{a p}} = \left\{ 1 + \sqrt{\frac{b d q}{a p}} \right\} v \end{aligned}$$

The velocity  $v$  of the ship therefore will be,

$$\frac{w}{1 + \sqrt{\frac{b d q}{a p}}}$$

Case 2. As to the motion of a vessel in a side wind, the problem is somewhat more complicated.

Suppose A B (Pl. 2, Fig. 2) to be the keel, C the centre of the mast, D H the yard, trimmed square, W C the direction and velocity of the wind, and C E the velocity of the ship. Then, relatively to the ship, the direction of the wind on the sail will be in the diagonal  $y C$ , and  $C f$  will be the direction of her vane when in motion, though  $C g$  will be its direction when at rest; this apparent change or heading of the wind when a ship is in motion is familiar to seamen. Now, since the wind,  $y C$ , acts obliquely on the sail, D H, we must reduce its direct impulse in the ratio of the square of the sine of obliquity. Draw H K parallel to  $y C$ , and D K perpendicular to H K; also draw K L perpendicular to D H, then D K will be as the number of particles striking the surface of the sail, and the perpendicular action will be represented by K L. The other portion of that force acting parallel to the face of the sail, and perpendicular to the keel, can have no effect on the progressive motion of the ship, except that its friction, or the bagging of the sail, may tend to carry the vessel to leeward, which we do not at present consider, looking on the sail as a plain surface. Draw the perpendicular  $y G$ , then C G is the sine of obliquity  $y C H$ , and the impression of  $y C$  is as the square of C G.

Preserving the same notation as before, we have  $C E = v$ ,  $W C = w$ ,  $E G = w$ ,  $\sin Y G E = w$ ,  $\sin W C H$ , and  $C G = E G - E C = w \cdot \sin W C H - v$ ; and since the impulse =  $a p \{ w \sin W C H - v \}^2$ , where  $a$  = area of sail, and  $p$  the impulse on the square foot, we have,

$$a p \{ w \sin W C H - v \}^2 = b d q v^2$$

$$\text{and } w \cdot \sin W C H = \left\{ 1 + \sqrt{\frac{b d q}{a p}} \right\} v$$

$$\left\{ 1 + \sqrt{\frac{b d q}{a p}} \right\}$$

$$\text{and } w = - \frac{\sin W C H}{w \cdot \sin W C H} \times v$$

$$w \cdot \sin W C H \quad w \cdot \sin W C H \sqrt{a p}$$

$$\text{or } v = - \frac{1 + \sqrt{\frac{b d q}{a p}}}{1 + \sqrt{\frac{b d q}{a p}}} \sqrt{a p} + \sqrt{b d q}$$

which is precisely the former result, reduced by the sine of obliquity.

In either of these cases, it may be perceived that the coefficient of  $v$  being constant,  $w$  and  $v$

Q

are proportional to each other, the velocity of the ship with the same sail is proportional to the velocity of the wind. But the quantity  $a$ , expressing the area of sail, being under the radical sign, the velocity of the ship, the wind remaining the same, will be as the square root of the area of sail; so that to procure a double velocity, four times the area of sail is required.

Case 3. But it is not usual to keep the yards square when the wind is oblique to the course; a considerable portion of the wind that might be intercepted would be lost; and if the wind were before the beam, the sails would be taken aback.

Besides, ships exposing more surface of sail when their sides are exposed to the wind, are enabled to make up for the loss of power occasioned by the obliquity of action.

Let the sail  $D H$  (Fig. 3) be trimmed obliquely: it is evident, that since the impulse of the wind must be perpendicular to the sail, the vessel will not move in the direction of her length  $A B$ , but in some other line to leeward of it, as  $C E$ . Her head therefore must be kept to windward of her intended course; the amount of this deviation,—viz., the angle  $B C E$  is called the lee-way. If the ship were a round tub, to be equally moveable in all directions, and fitted with a mast and sail in the centre, it is clear that if prevented from turning round, it would move in the direction  $C L$  perpendicular to the yard. But being from the construction much more easily moveable in the direction of the length than the breadth, the course of a ship will be somewhere between  $C L$  and  $C B$ ; and whatever be the amount of the impulse on the sail in the direction  $C L$ , the angle of lee-way,  $B C E$ , will remain the same, for the impulse of the resisting surfaces will still be proportionate; and this impulse must be in the direction  $C L$ , so long as the yard remains in the same trim. Whatever may be the direction of the wind, it follows therefore that the lee-way depends on the shape of the vessel and trim of the sails, not considering the effect produced by the action of the wind on the hull and rigging, which, when the quantity of sail carried is small, becomes a very important part of the whole impelling power. If we knew the proportionate resistance made to longitudinal and transverse motion, we could ascertain the lee-way for any angle of impulse. But we have seen that the resistance on the sides, if calculated according to the theory, would not present us with a true result, since the action of the fluid on them in this case would be very oblique. In common vessels, besides, the form cannot be reduced to an equation, and the surfaces of action change with every variation in the direction of the impelling power. As matter of fact it is known that a good-sailing ship, with all her sails in action, will not make more than from  $5^\circ$  to  $12^\circ$  lee-way. The amount increases as she is obliged to take in her sails, and in the shallow vessels employed in inland navigation, the lateral resistance being less in proportion, the lee-way must in general be greater. Hence the adoption of lee-boards, sliding-knots, &c., which increase the lateral resistance, without diminishing much the direct motion. But, to proceed in the investigation

before us, take  $C E$  to represent the motion of the ship,  $W C$  that of the wind, then the diagonal  $C$  will be the relative direction and force of the wind on the sail  $D H$ , and its impulse, as in the former case, will be represented by the square of  $C G$ . Draw the perpendiculars  $m E$  and  $W K$ ; then, because of parallels,  $m C = G K = E C \cdot \sin E C H$ , and  $C K = C W \cdot \sin W C B$ ; and with the former notation  $E C = v$ ,  $W C = w$ ; then  $C G = C K - G K = w \cdot \sin W C H - v \cdot \sin E C H$ ; and the impulse on the sail will be—

$$a p \{ w \cdot \sin W C H - v \cdot \sin E C H \}^2$$

Now, the vessel moving uniformly, this impulse will be equal and opposite to that produced by the resistance to the ship's side, in the direction  $L C$ , when the ship is moving with the velocity and direction  $C E$ . Let  $C L$  represent this impulse, or that of the wind on the sail, and resolve it into  $C M$  and  $M L$ , of which  $C M$  will represent that part effective in the direction  $B A$ , and  $M L$  that in the transverse direction, when sailing with the lee-way  $B C E$ : putting  $s$  = surface or side of the ship exposed to the action of the water in the direction  $C L$ ;  $q s$  will be the impulse of the water on it—

$$\text{and } a p \{ w \cdot \sin W C H - v \cdot \sin E C H \}^2 = q s v^2$$

$$\text{or } w \cdot \sin W C H = v \left\{ \sin E C H + \sqrt{\frac{q s}{a p}} \right\}$$

$$\text{and } w = v \left\{ \frac{\sin E C H + \sqrt{\frac{q s}{a p}}}{\sin W C H} \right\}$$

$$\text{or } w : v = \sin E C H + \sqrt{\frac{q s}{a p}} : \sin W C H$$

Where, by diminishing  $E C H$ , that is, by trimming sharp, and enlarging  $a$  the quantity of sail in proportion to  $s$  the side exposed to the water, the third term of this proportion may be *less* than the fourth, and consequently that the velocity of the ship may exceed that of the wind.

## SEC. II.—IMPROVEMENTS IN PRACTICAL CONSTRUCTION.

In the present state of naval architecture, it is hardly possible to offer observations on any part of a ship's construction, without associating with those remarks the name of sir Robert Seppings, the late Surveyor of the Navy, who has, within a period of about fifteen years, effected a complete revolution in the principles of practical construction; so much so, indeed, that two distinctive appellations are now commonly applied to particularise his from the *former* mode of ship-building—the “*new, or diagonal system*,” and the “*old system*.”

Of all large machines destined to undergo severe shocks, a ship, is perhaps, the least skilfully and artificially contrived. The frame of a seventy-four gun ship, constructed on the old principle, is formed of more than eight hundred different timbers, placed at right angles to the keel, which may be considered as the back-bone of an animal, and the frame timbers its ribs. Each rib is composed of several pieces, of the thickness of fourteen inches, or thereabouts.

Between the several divisions of the frame, or ribs, is a space from one to five inches wide. The whole exterior frame is covered with planks of different thicknesses, or, to carry on the figure, the ribs are covered by a skin of greater or less substance, from the extreme ends of them to the keel or back-bone. The inside of the frame is also almost entirely lined with planks; within which is another partial range, as it were, of interior ribs, at a considerable distance from each other, termed riders. Across this frame are pieces of timber called beams, united together so as to be of sufficient length to reach from one side of the ship to the other.

The use of these beams is to secure the sides of the ship so as to prevent her upper works from spreading, and to keep that part which is under water from being compressed by the fluid. They are also the supports or bearers of the decks, (or what we call in houses the girders for the floors), and must, therefore, be of such strength as to endure the weight of the cannon, and whatever else is to be placed upon them. The usual mode of fastening these to the sides, has, generally speaking, been merely local, by two angular pieces of timber or iron (called knees) bolted to each beam, and also to the sides of the ship, by which means they were only partially held to the side, and there was wanting that continuity of materials, and consequently of strength, which the new system gives. Between the beams, and at right angles with them, are placed pieces of wood called carlings, and at right angles with these, (consequently parallel to the beams,) ledges, which correspond with joists in a house. The planks or flat of the deck (flooring) is laid nearly in parallel lines from head to stern, upon and at right angles with the beams, and is fastened to them, and to the carlings and ledges, by bolts, nails, or wooden pins, called treenails. It will thus appear evident that the decks, according to the old construction, are in nowise connected with the sides of the ship.

From this sketch, it will be perceived, that all the materials composing the fabric of such a ship are disposed nearly at right angles to each other. This disposition, which, in every wooden fabric is well known to the meanest mechanic to be the weakest, is particularly so in a ship, the immense body of which, subject to violent action from impulses in every direction, is sustained by a greater pressure on the centre than the extremities, arising chiefly from the difference in the fore and after parts of the body to that of the midship, or middle part. From the want of a continued succession of support from the centre to the extremities originates the tendency to arching, or hogging. This tendency shows itself in a ship from the moment of her launching; when it is invariably found that the two extremities, being less supported by the water than the middle, drop, and give to the ship a convex curvature upwards in the direction of her length, an effect, which from its resemblance to the shape of a hog's back, is usually termed hogging. In very weak or old ships, it may be traced in all the port-holes of the upper deck, by their having taken the form of lozenges, declining different

ways from the centre of the ship to each extremity.

To discover the law which influences a ship when floating quiescently in the water, we may suppose the vessel to be divided into vertical sections of an indefinitely small constant thickness, perpendicular to a vertical longitudinal plane. If we commence our consideration at the stern, and advance gradually forward, it is evident that the sections comprising the counter and its connecting parts, being free from the water, will be subject to no re-action from it; and when at last any re-action does take place, it must be at first, from the peculiar form of the body, be infinitely less than the weight of the section whose displacement occasions it. As we approach, however, the midship section of the vessel, the upward pressure of the fluid will approximate more and more to an equality with the weight of its corresponding section, and ultimately become equal to it; and if we pass beyond this section, which may be denominated the section of hydrostatic equilibrium, we shall find the weight of the water displaced, become greater than the weight of the section above it. In like manner, if we commence at the bow of the vessel, we shall find a similar section of hydrostatic equilibrium, and afterwards a like increase of the weight of the water displaced above that of the section reposing on it.

In Dr. Young's "Remarks on the Employment of Oblique Riders," inserted in the Philosophical Translations for 1814, he gives the following as the results of his calculations on the distribution of the forces operating on the hull of a seventy-four gun ship, fitted for sea, whose length is 176 feet, and breadth 47 $\frac{1}{2}$ .

TABLE IV.

Distance from the stern.	Weight of the Sections.	Pressure of their Displacement.	Difference of weight and pressure.
.. 49	+ 699	— 627	+ 72
Next 20	+ 297	— 405	— 108
.. 50	+ 1216	— 1098	+ 118
.. 20	+ 290	— 409	— 119
.. 37	+ 498	— 461	+ 37
176	+ 3000	— 3000	= 000

Dupin in his paper *De la Structure des vaisseaux Anglais*, in the Transactions for 1817, has given an elaborate analytical view of this subject, and has furnished the different equations on which the whole problem of arching depends; from which he deduces the following theorems.

I. That when a vertical plane divides a vessel into two parts, so that the weight of each is equal to the weight of water displaced by it, the moments of those parts estimated in relation to the same plane, to produce what is denominated arching, will be either a *maximum* or a *minimum*.

II. That this effect will be a *maximum*, when the infinitely small section contiguous to the plane of the moments, has its own moment in a contrary direction to the total moment.

III. That the effect will be a *minimum* when this section has its own moment acting in the same direction as the total moment.

These theorems are applied by Dupin to the distribution of the forces in a seventy-four gun ship, the numerical elements relating to the weights and displacements being derived from the paper above mentioned of Dr. Young. We must, however, observe that the causes of arching are not to be attributed entirely to the unequal distribution of the weight and pressure, but that the partial horizontal pressure in a longitudinal direction of the water, also contributes to this alteration of form, affecting the lower parts of the ship only, and tending to compress and shorten the keel, while it has no immediate action on the upper decks. The pressure thus applied, must obviously occasion a curvature, if the angles made with the decks by the timbers, be supposed to remain unaltered, while the keel is shortened in the same manner as any soft and thick substance pressed at one edge between the fingers, will become concave at the part compressed; and this strain upon the most probable supposition respecting the comparative strength of the upper and lower parts of the ship, must amount to more than one-third as much as the mean value of the former, being equivalent to 1000 tons, acting on a lever of one foot in length, while the strain, arising from the unequal distribution of the weight and displacement amounts where it is greatest, that is about 37 feet from the head, to 5260 in a seventy-four gun ship of the usual dimensions; and, although the strain is considerably less than this exactly in the middle, and throughout the aftermost half of the length, it is no where converted into a tendency to "sag," or become concave.

In addition to these forces as operating to produce arching, we must take into account the action of the waves; for the magnitude of the strain on the different parts of a ship is subjected to very material alterations when she is exposed to the forces of the wind and waves. The effect of the wind is generally compensated by a change of the situation of the water line or line of floatation, so that its amount may be estimated from the temporary or permanent inclination of the ship; and the force of the waves may be more directly calculated from their height and breadth. These two forces can seldom be so applied as to combine their effects in producing a strain of the same kind in their full extent; it will, therefore be sufficient to determine the probable amount of the force of the waves, which is more materially concerned in affecting the longitudinal curvature than that of the wind. As a fair specimen of the greatest strain that is likely to arise from this cause in any common circumstances, we may consider the case of a series of waves twenty feet in height, and seventy in breadth; the form being such that the curvature of the surface may be nearly proportional to the elevation or depression; a single wave might indeed act more powerfully than a continued series, but such a wave can scarcely occur singly. We shall then find upon calculation, that the greatest strain takes place in a seventy-four gun ship at the distance of about eighteen feet from the midships, amounting to about 10,000 tons; at the instant when the ship is in a horizontal position, while in more common cases, when the waves are nar-

rower, the strain will be proportionably smaller and nearer to the extremity. Hence it appears, that the strain produced by the action of the waves, may very considerably exceed in magnitude the more permanent forces derived from the ordinary distribution of the weight and pressure, being according to this statement nearly three times as great; so that when both strains co-operate, their sum may be equivalent to about 15,000 tons, acting on a lever of one foot, and their difference in opposite circumstances to about 5000. It may also be remarked, that the pressure of the water against the sides of a ship has a tendency to cause a curvature in a transverse direction, which is greatly increased by the distribution of the weight, the parts near the sides being the heaviest, while the greatest vertical pressure of the water is in the neighbourhood of the keel.

To correct the alterations of form arising from the action of these various forces, has been the great object of the labors of Seppings. As we have before observed, the manner in which the principal materials composing the hull of a ship is inartificial in the extreme; the ribs form a right angle with the keel, the inside and outside planks are at right angles to the ribs, the beams at right angles to these, the carlings the same to the beams, the ledges to the carlings, and the planks of the decks to the ledges, the beams, and the ribs. The weakness of a disposition of this nature, may be illustrated by putting together four pieces of wood, and securing them by iron pins at the four corners, in the form of a square or parallelogram; this, on the least pressure, may be made to change its form to the rhombus. But, let another piece be fixed to it diagonally, and the figure of the frame will be found immovable. Place a bar in the middle parallel to two of the sides, and secure it firmly by iron pins, still the figure will be easily moved by the hand, like a parallel ruler, and assume the rhomboidal shape of A (PL. 3, FIG. 1), or B, (PL. 3, FIG. 2); but, apply to the frame where carpenters term the brace in a common field gate, as Z (FIG. 3), and the figure will remain as before, immovable. If this brace or diagonal piece be not fitted to it, the outer part of the gate (or that part most distant from the hinges) will have a constant tendency downwards, until at length it will reach the ground.

Let FIG. 4 and 5, represent two frames of wood composed of parts strongly connected by bolts or iron pins, of which the former is put together on the old, and the other on the new principle. Let C C represent a fulcrum or point of support, and D D be two weights, to be attached to the extremities for the purpose of ascertaining the comparative strength and stiffness of each frame. This experiment will show that the stiffness of FIG. 5 is to that of FIG. 4, as 6 to 1, and the strength as 3 to 1; and the greater the length of the frames, the more manifest will be the decided advantage of the new principle, as respects both of those qualities. The substitution of the triangle, as in the frame, FIG. 5, the rectangle in the frame, FIG. 4, comprehends the principle of the new system, which consists in the application to the ribs or timbers of the ship from one ex-

tremity to the other, and from the orlop deck downwards to the kelson, a series of diagonal braces disposed in the form of triangles, the sides of which give to each other a mutual support and counteraction. These triangles are firmly bolted to the frame; and in order to give a continuity of strength to the whole machine, and leave no possible room for play, the spaces between the frames were filled up originally with old seasoned timber, cut into the shape of wedges, but recently, with a prepared cement, thus rendering the lower part of a ship, one solid complete mass, possessing the strength and firmness of a rock.

The same principle of trussing is carried from the gun-deck upwards, from whence, between every port, is introduced a diagonal brace, which completely prevents the tendency of ships to stretch, or draw asunder their upper works. The decks, too, are made subservient to the securing more firmly the beams to the sides of the ship, by the planks being laid diagonally in contrary directions, from the midships to the sides, and at an angle of  $45^{\circ}$  with the beams, and at right angles with the ledges. In frigates and smaller vessels, iron plates lying at an angle of  $45^{\circ}$ , with the direction of the trusses, are substituted for the diagonal frame of wood in ships of the line.

By this mode of construction the ceiling, or internal planking, is wholly dispensed with, and a very considerable saving of the finest oak timber thereby effected; and what is more important, those receptacles of filth and vermin between the timbers, which were before closed up by the planking, entirely got rid of. This is not the least important part of the improvement, either as it concerns the soundness of the ship, or the health of the crew. It is stated that a ship which had been three years in India, on being laid open, exhibited a mass of filth, mixed up with dead rats, mice, cockroaches, and other vermin, which was taken out in cakes, not unlike in appearance, the oil-cakes with which certain animals are fed; that the stench was abominable, and the timbers with which it was in contact rotten. No such filth can find a lodgement in ships of war as they are now built.

The first ships of war on which the new principle was tried were those rebuilt or repaired in docks, from which they were quietly floated out without any shock from launching; several of them sustained several gales of wind, without showing the least symptoms of weakness, but quite the contrary, not even a crack appearing in the white-wash with which their sides within were covered. If these experiments were not satisfactory, the launching of two of the largest ships in the navy established the fact of superior strength beyond the possibility of a doubt—the Nelson and the Howe. The Nelson, constructed on the old principle, was probably in every respect the best built ship in modern times; the timber sound and well-seasoned; the workmanship admirable; no pains were omitted by Mr. Sison, the builder, to have her as perfect as she could be made; and her motion, when launched from the stocks, was slow, easy, and majestic, without a shake or a plunge; yet the Nelson, after launching, was found to have arched no less than  $9\frac{1}{2}$  inches. The Howe is a sister ship

to the Nelson, but built on the new principle; and after launching she was found to have arched only  $3\frac{1}{2}$  inches. The St. Vincent, built on the old principle, and otherwise the same in every respect as the Howe, likewise hogged on launching  $9\frac{1}{2}$  inches, and the whole fabric in both cases, was found on examination to be greatly disturbed; whereas, the Howe exhibited no such symptoms. Fig. 6, Plate III. will show the mode of trussing ships of the line according to the plans of Sir Robert Seppings, now almost universally adopted in the British Navy.

By the same individual a great variety of other improvements in the different parts of the construction of a ship have been proposed and introduced into general use in the navy. It was he who, in 1807, first suggested the plan of rounding the form of the bow in ships of the line, which is considered by nautical men of great utility and importance, and has been since generally adopted. The removal of the head-railing, and the continuing of the rounded form, give not only great additional strength, but also much more comfort and convenience to the crew, and security in that part of the ship when in action.

The scarcity of compass, or crooked timber, was for some time attended with serious injury to those ships of war while on the stocks into which it was considered necessary to be introduced. The difficulty with which it was procured, the length of time which a ship sometimes remained on the stocks, waiting for a few pieces of compass timber, and the necessity of adding immediately the green wood when found, to the seasoned timber in other parts of the frame, gave to the ship different periods of durability; though, in the long run, the seasoned parts became affected by the green wood with which they were in contact, and a premature decay of the whole fabric was the consequence. Seppings therefore proposed a plan in 1806, which, by uniting short timbers according to a method called *searping*, enabled him to obtain every species of compass form that could be required from straight timber. Since that period the whole frame of a ship can be prepared at once, without waiting for particular pieces, and thus every part of it be made to undergo an equal degree of seasoning.

By the same ingenious and indefatigable shipwright, a plea was proposed and adopted in the year 1813, by which ships of the line were built with timber hitherto considered as applicable only to the building of frigates, and that which had been deemed only fit for inferior uses was appropriated to principal purposes. The Talavera was the first ship built on this principle, and the expense of her hull is stated to have been about £1000 less than that of the Black Prince, a ship of similar dimensions built on the old principle. The method by which the timbers were united was found, on trial of the two ships while in frame, to give so much additional strength to the former, that it furnished the ground-work of the present mode of framing the British navy, by the introduction of the same union of materials in the application of the large as was practised in that of the

small; from which a union of strength and economy has resulted.

The building of the Talavera, and the great strength of her frame, led to the practice of putting together the frames of ships of the line from timbers of reduced lengths, and dispensing altogether with the chocks used for uniting their extremities, or, as they are technically termed, their heads and heels. These chocks are of the form of an obtuse wedge, as A (Fig. 7), and they are used to unite the two pieces of timber, as B and C, by firmly bolting the piece A to the two timbers B and C. It generally happened, however, that in the operation of fixing this chock its two extremities split, and the surfaces of the chock and timbers not being in perfect contact, the moisture and air were admitted, and naturally occasioned the dry-rot to exist in those parts of the ship than in most others; and, as there were from 400 to 500 of these chocks in a 74 gun ship, it will readily be conceived what mischief was done to the whole fabric, if the greatest care were not taken by the workmen to prevent their splitting, and to bring their surfaces immediately into contact. It is obvious, also, that a great deal of timber must have been cut to waste in making these chocks; in fact, they consumed in each ship timber to the value, when it was at a high price, of from £1500 to £2000, independent of the expense of workmanship, which was considerable; and when the ship came to be repaired not one chock in six was found to be in a fit state to be used again. To obviate these disadvantages, Sir Robert Seppings brought the butt ends of the timbers together, as represented in Fig. 8, and kept them in that position by means of a round dowel or coak, in a manner similar to that by which the felloes of a carriage-wheel are united. He justly observes that the simplicity of the workmanship, the economy of the conversion of the timber, and the greater strength and durability, although of considerable moment, are of trifling importance when compared with the advantage of rendering timber generally applicable to the frames of ships which had heretofore been but partially so.

Of all the designs brought forward by the distinguished individual to whom the merit of the above improvements is due, there is one which has been questioned with a keenness and severity of a very uncommon kind, and which, it may be not unfairly added, has been opposed by prejudices of no ordinary nature, we mean that of the substitution of the circular form in the sterns of war, for that at present existing. Circular sterns, when contrasted with those of a square form, may be contemplated under two points of view. In the first place we should inquire into the strength peculiar to each form, considered as a system of mechanical forces; and secondly into the means which each affords for carrying into effect the more immediate objects of a ship of war namely, attack and defence.

In the mechanical construction of a ship, every part of its structure ought to possess a proper degree of strength; no one part possessing—if such an expression may be made use of—more strength than is absolutely necessary, nor any part less strength than the nature and office of

that particular part is destined to maintain. The change which Sir Robert Seppings contemplates, and which he has actually applied to several ships, is, to communicate to the stern the strength and firmness of the bow; and to continue the diagonal system of building, which he has lately introduced, round the stern, in order to make the strength of the fabric uniform and complete. It is now universally admitted that the diagonal system has communicated great strength to every part to which it has been hitherto applied; and there seems no good reason why the same increase of strength should not be communicated to a part so notoriously weak as the present square stern, particularly when by doing so, not only the mechanical frame of the ship is materially strengthened, but its means of defence also very much increased.

In the consideration of the means which each form of the stern affords for attack and defence, the same objections may be urged against the defence of a square stern, as is known to attach to a redoubt of a square form. "Redoubts," says Malorti de Martemont, in his theory of Field Fortification, "when they are not flanked by some other fire, have two essential defects; the first is, that their salients are unprotected, which cannot be remedied but by adapting to those salients a few teeth of cremailleure, or, when the ground and every other circumstance will allow it, by directing the saliants towards some inaccessible points, or by placing in front of them, when possible, some artificial obstacles." "But," continues Malorti, "circular redoubts have not that defect, as their fire, which has no fixed direction, may incessantly vary, and spread itself on every point of the ground that surrounds them;" and, "the defence which they present is uniform on every part of the circumference." Now the defects which this able writer attributes to square redoubts, hold, in all their force, against the defence of the square stern; while the reason he gives in favor of redoubts of a circular form, applies most favorably to ships with round sterns. It is true that the defence of the stern only includes the form of a semicircle, while the defence of the redoubt here alluded to, embraces the whole range of its circumference; still the reasoning holds good for the latter figure as well as for the perfect circle, because the chord of the semicircle, in the case of the circular stern, requires no defence.

In the case of an attack on the quarter of a ship, as by a steam-vessel for instance, of the kind just alluded to, Sir R. Seppings' plan gives a superiority, not only on account of the additional number of guns which the ship is enabled to bring into action, and the sweep of the ocean which those guns are able to command; but also an advantage of another kind, arising from the diminution of the distance of that point from the ship where the shot from the two after-guns cross each other, when the guns are trained to their greatest angle,—a point, it is presumed, of no small importance in case of an attack from a steam vessel. These united considerations tend unquestionably to prove that the circular stern is the form best capable of defence.

In concluding these remarks we may not im-

properly glance at the improvements which have of late years been introduced in the preservation of the navy. Not only is the new mode of construction highly favorable to the duration of ships, but the ravages of the disease known by the name of the dry-rot, occasioned principally by the hurry in which they were built during the late war and the unseasoned state of the timber made use of, led to such measures as tend most effectually to the preservation of the fleet.

In the first place, various modes were put in practice for assorting and seasoning the timber, and for protecting it from the vicissitudes of the weather. The oak and fir of Canada, which had been introduced to a great extent in our dock-yards, during the time the Baltic was shut against this country, are now excluded; those woods having been found not only to possess little durability, but so friendly to the growth of fungi, that they communicated the baneful disease to all other descriptions of timber with which they came in contact. The greatest of all improvements, however, for the preservation of the navy, is the roofing thrown over them while building, and in ordinary; a practice, the utility of which is so obvious that it is quite extraordinary it should not have been earlier adopted. By filling in between the timbers masses of cement, and then injecting, by forcing-pumps, a mixture of oil and tar into all the joints and crevices of the frames; and lastly by the constant care and attention bestowed on ships after leaving the dock-yard, and being placed in a state of ordinary, it may be said that the dry-rot has no longer any existence in the British navy.

A ship now placed in ordinary, whether new or newly repaired, is carefully housed over, so that no rain can reach her lower decks; several streaks of planks are removed from her sides and decks, to admit a thorough draft of air, which is sent down by wind-sails, and which pervades every part of the ship; this, with the addition of two small airing-stoves, in which a few cinders are burned, render her perfectly dry and comfortable on all the decks and store-rooms. All the shingle-ballast is removed out of the hold, which is thoroughly cleared and re-stowed with iron-ballast, which is completed by the lower tier of iron tanks being filled with pure water. The former practice of mooring two ships together, by which the two sides next to each other, deprived of the sun and a free circulation of air, were generally found to be decayed, is discontinued. The lower masts are left standing and their tops housed over; the gun-carriages and several of the stores are left on board; and such, in short, is the state of a ship in ordinary, that she may be fitted in all respects for proceeding to sea in half the time formerly required.

A practice has recently been introduced into the dock-yards, of steeping oak timber in salt water for several months, and then stacking it till it becomes perfectly dry, which is said to have entirely put a stop to the dry-rot where it had already commenced, and to act in general as a preventative to that disease. Some doubts have, however, been entertained on this point,

and the Americans seem to place but little confidence in the plan. Rodgers, the commissioner of their navy, states in an official report addressed to the secretary, that "experiments have been made to arrest the dry-rot in ships by sinking them for months in salt water, but without success. The texture of the wood was found to be essentially injured by being thus water-soaked, and it became more subject to this disease than before it was sunk. The ships were also injured in their fastenings, and the atmosphere within them was kept in a constant state of humidity, whence, among other ill effects, proceeded injury to provisions and stores, and sickness to the crews." Now we know that not one of these injurious effects happened to the *Eden*, which was sunk in Hamoaze, remained under water three or four months, was sent to India, and continued at sea for a long period; but from being covered with fungus before the operation, she has not since shown a single symptom of dry-rot. The truth is, that the American timber, with the single exception, perhaps, of the live oak, is remarkably subject to dry-rot, of which, during the late war, we had fatal experience. Mr. Knowles, in his Treatise on the means of preserving the British navy, is led to conclude, from a variety of experiments, "that timber is better seasoned when kept for two years and a half under cover, than when placed for six months in water, and then for two years in the air, protected from the rain and sun; that it loses more in seasoning, by having been, during the six months of immersion, alternately wet and dry, than it does from having been the whole of the time under water; and that the loss in moisture is greater in all cases in a given time, when the butt-ends are placed downwards."

The following are the most celebrated works on Naval Architecture:—*Elémens de l'Architecture Navale, ou Traité Pratique de la Construction des Vaisseaux*, by M. du Hamel du Monceau, an excellent work, which possesses the merit of having been the first to illustrate, in a satisfactory manner, the theory and practice of the art. *Traité du Navire*, by Bouguer. *Théorie complète de la Construction, et de la Manœuvre des Vaisseaux*, by Euler. The *Scientia Navalis*, of the same author, is a learned and conspicuous work. *Essai Géométrique et Pratique sur l'Architecture Navale*, by M. Vial du Clairbois. *Manuel de Construction Pratique*, by M. de Lironcourt. *Traité de la Construction des Vaisseaux*, by M. Dumait de Goimpy. *Examen Marítimo*, in Spanish, by Don Jorge Juane. This work contains a most excellent theory, founded on experience and practice. It has been translated into French by M. Levèque, who has added several valuable notes. A *Treatise on Naval Architecture*, in Swedish, by Chapman; translated into French by M. Vial du Charbois, and into English by Dr. Inman, the learned professor at the Naval College, Portsmouth. To these must be added the papers of Attwood on stability in the *Philosophical Transactions* for the years 1796 and 1798; that of Steppings and of Young in those of 1814 and that of Dupin of 1817.

**SHIP-CARPENTER.** A ship-builder. See CARPENTER.

**SHIPRAH AND PUAH,** two midwives of Goshen, in Egypt, deservedly celebrated in sacred history, and rewarded by the Almighty himself for their humanity, in disobeying the bloody mandate of the tyrant of Egypt to murder the Hebrew boys at their birth. *Exod. i. 15—19.* Some commentators have expressed doubts whether these worthy women were Egyptians or Hebrews; but we think it hardly admits of a question that they were Hebrews, as otherwise their pagan superstition would have led them to comply with the royal mandate, and to think that at the same time they served their gods, by murdering the children of a race who despised their deities.

**SHIP-MONEY,** was an imposition charged upon the ports, towns, cities, boroughs, and counties of this realm, in the reign of king Charles I., by writs, commonly called ship writs, under the great seal of England, in the years 1635 and 1636, for the providing and furnishing of certain ships for the king's service, &c., which was declared to be contrary to the laws and statutes of this realm, the petition of right and liberty of the subject, by stat. 17 Car. I. c. 14. See Blackstone's *Commentaries*, vol. iv. p. 30.

**SHIPWRECK, MEANS OF PRESERVING LIVES, IN CASES OF.** In the *Philosophical Magazine* we have an account of means for preventing that loss, when the ship is in danger between 200 or 300 fathoms of the shore. The only certain means of saving the crew of a vessel in such a state is to establish a rope of communication from the shore to the ship, by fixing the end of the rope to a bomb or cannon ball, and extending the rope afterwards, in a zig-zag direction, before the mortar or cannon, or suspending it on a piece of wood raised several feet. A rope, so placed, will not break by the greatest velocity which can be given to the bomb or ball; and thus the end of it can be sent ashore by a discharge of artillery. The writer prefers the bomb to the cannon ball. He proposes, however, other means to effect his benevolent purpose. ‘It ought to be remembered that a vessel is never cast away, or perishes on the coast, but because it is driven thither against the will of the captain, and by the violence of the waves and the wind, which almost always blows from the sea towards the shore, without which there would be no danger to be apprehended; consequently, in these circumstances, the wind comes always from the sea, either directly or obliquely, and blows towards the shore. 1st. A common paper kite, therefore, launched from the vessel and driven by the wind to the shore, would be sufficient to save the crew, consisting of 1500 seamen, if such were the number of a ship of war. This kite would convey to the shore a strong packthread, to the end of which might be affixed a cord, to be drawn on board by means of the string of the kite; and with this cord a rope, or as many as should be necessary, might be conveyed to the ship. 2d. A small balloon, of six or seven feet in diameter, and raised by rarified air, would be also an excellent means for the like purpose: being driven by the wind from the vessel to the

shore, it would carry thither a string capable of drawing a cord with which several ropes might be afterwards conveyed to the vessel. Had the discovery of Montgolfier produced no other benefit, it would on this account be of great importance. 3d. A sky-rocket, of a large diameter, would be of equal service. It would also carry, from the vessel to the shore, a string capable of drawing a rope after it. Lastly. A fourth plan for saving the crew of a shipwrecked vessel, is that of throwing from the vessel into the sea an empty cask with a cord attached to it. The wind and the waves would drive the cask to the shore, and afford the means of establishing that rope of communication already mentioned.

Mr. John Bell, of the royal artillery, afterwards promoted to a lieutenancy, contrived a similar method of saving persons from stranded ships, in the year 1791, by providing a mortar between 500 and 600 weight, with a chamber, &c., capable of containing one pound of powder, and a bore to admit a leaden ball sixty pounds or upwards. When a ship is stranded, the mortar is to be elevated about  $45^{\circ}$ , and a rope or deep-sea line is to be fastened by one end to the ball, while the line itself, being coiled round parallel handspikes, may be easily and rapidly unfolded to its full extent. On the discharge of the mortar towards the shore, the ball will carry with it the line or rope, and by burying itself in the earth make that end of the rope fast, while the other end is in the stranded vessel: thus the rope becomes stretched between the vessel and the shore, and a communication thence established by means of rafts. The rafts recommended by lieutenant Bell are each formed by lashing together with ropes five empty water-casks belonging to the ship, and lying above them a seaman's chest, with holes cut in its sides, to prevent its filling, and to allow the person who rides in it better convenience for taking hold; pulleys are attached to this chest, through which the rope is to run: the raft is also to be ballasted underneath, to prevent its upsetting. The mortar and necessary balls or shells that would be used on such an occasion might form a part of the ballast of the vessel; and whenever a ship is driving or unmanageable near the shore, the mortar might be brought on deck, and the apparatus prepared. In some cases grapnels may be advantageously fired from common ordnance to answer the same purpose.

The following is a relation of some trials made before a committee of the Society of Arts at Woolwich, in August, 1791. From a boat moored about 250 yards from shore, the shell was thrown 150 yards on shore, with the rope attached to it; the shell was of cast iron, filled with lead; it weighed seventy-five pounds; its diameter eight inches; the rope in the trial was a deep-sea line, of which 160 yards weighed eighteen pounds; the angle of the mortar, from whence the shell was fired, was  $45^{\circ}$ . By means of the line, lieutenant Bell and another man worked themselves on shore upon his raft of casks; there were many links in the rope, but they were cleared with ease by lieutenant Bell, with the assistance of his match-blocks. The second trial was repeated in a similar manner, and with equal success, the

shell falling within a few yards of the former place; the gale of wind was brisk, and the water rough. The direction of the shell was nearly from north to south, and the wind blew nearly north-west. In the third trial, the mortar was elevated to  $70^{\circ}$ ; the rope attached to the shell was an inch and half tarred rope, of which every fifty yards weighed fourteen pounds and a half. The shell was of the kind above mentioned; it fell 160 yards from the mortar, and buried itself about two-thirds in the ground; the line or rope run out was about 200 yards, and it required the force of three men to draw the shell out of the ground at that distance.

There can be little doubt that, in many cases when vessels are stranded near the shore, the adoption of the means pointed out by lieutenant Bell would tend to the preservation of many valuable lives; and since a suitable piece of ordnance, with a block carriage and leaden balls, would not cost above eleven or twelve pounds sterling, the expense furnishes no objection of moment. Indeed, in trading vessels, such a piece might farther answer the purpose of making signals of distress, by filling the chamber with powder, and well wadding it, when the report of the firing would be heard to the distance of some miles; and, in defence of a ship, such a gun would be highly useful, on account of the facility which its shortness gives to its loading and firing. The Society of Arts, &c., rewarded Mr. Bell, at that time a sergeant in the royal artillery, with fifty guineas for his invention: they published the particulars in the tenth volume of their Transactions, and thought it expedient again, in the year 1807, to insert a descriptive engraving that had been omitted at that time, with some farther particulars in the twenty-fifth volume. Models and drawings of the whole apparatus are reserved in the society's repository for the instruction of the public.

To save the lives of shipwrecked persons, and to rescue mariners from a watery grave, seems, even in idea, a contemplation so eminently benevolent, and in its execution, to a warlike, commercial, and generous nation like this, an undertaking so truly benevolent, so extensively philanthropic, that we cannot sufficiently applaud the humanity of the inventor of an apparatus to save the lives and property of the shipwrecked mariners in the extremity of danger. As there are few in this great nautical nation that are not directly, collaterally, or generally connected with marine affairs and marine adventures, the consideration, therefore, takes strong possession of the feelings of individuals, and of society at large, by the patriotic means of protecting the lives of a class of the most important members of the latter, and giving the former, that kind of moral security, and, consequently, mental happiness, which must arise from the perusal of a small octavo volume, published by captain G. W. Manby, of the royal navy, and an honorary member of the Humane Society.

The captain informs us, that while he was stationed at North Yarmouth, in the year 1807, a place remarkable for the beautiful features its coasts present in a calm, and for the terrific

distortion of them in a storm, he had been witness to the loss of several vessels; and, after describing the dreadful catastrophe, he very appropriately observes, that,

'The horrors of shipwreck at a distance from land, a scene I had unhappily too often witnessed, suggested to me also the benefit that must result from enabling a life or pilot-boat to go over a flat beach, with facility and certainty, to the relief of sufferers. This observation was corroborated by the opinions of various residents on the coast, whose assurances gave evidence, too conclusive, of the many lives and immense property annually lost for the mere want of the means I have hinted at: the chief difficulty was, that no boat could be forced over a high and raging surf without some powerful artificial aid. Among other desiderata that have grown out of my researches in this ardent and important work, there is one I presume to think of much worth. Boats, in common, where occasion has required their being launched in cases of shipwreck, have often failed, owing to their want of buoyancy, and other properties of the life-boat. I have devised a simple method of giving to every kind of boat these advantages, and at a most inconsiderable expense. Thus every vessel provided with a boat so prepared, would possess within herself the power of preserving the life of any person fallen or washed overboard, in a high wind and heavy sea; and boats around the coast, by the same means, may be converted into life-boats.'

From this benevolent idea, this treatise, in which captain Manby has reduced theory to practice, has emanated; and we are gratified to find, that parliament has, 'in the most liberal manner,' been pleased to countenance his undertaking. 'And why,' he philanthropically observes, 'may not the glorious cause of humanity be fostered on foreign shores? It would be heart-cheering indeed to learn, that the invention of an Englishman had been adopted for the salvation of the shipwrecked in every clime, and on every coast!'

This work contains representations of the apparatus, with directions for using it in the assistance of persons on board stranded vessels on a lee-shore, in the day, as well as in a similar situation at night.

**SHIPWRIGHT.** The company of shipwrights was instituted in the reign of James I., and consisted of a master, two wardens, and sixteen assistants. It appears in the twelfth volume of the *Archæologia*, that Mr. Phineas Pett, who had been educated at Emanuel College, Cambridge, and afterwards served his apprenticeship in Deptford dock-yard as a shipwright, was appointed master-shipwright at Woolwich dock-yard, in November 1605. He was elected and sworn master of the shipwright's company in April 1606, and their meetings were then held at the King's Head, in New Fish Street. That a new charter was granted in 1612 for incorporating the shipwrights of England, when Mr. Pett appears also to have been ordained the first master. According to Derrick's *Memoirs of the Royal Navy*, he became an assistant commissioner in February, 1630, and a principal commissioner

of the navy in December following. In 1637, by order of Charles I., he built the famous ship named the Sovereign of the Seas, the largest that had ever been built in England; she was afterwards cut down and called the Royal Sovereign.

In Pepy's Naval Minutes it is mentioned 'that Shipwright's Hall did anciently view and approve of the draught of the ships that were to be built for the king; and by the lord high admiral's warrant, dated in April, 1638, carpenters were not to be appointed to ships until they had been examined and licensed at Shipwrights' Hall. It appears from Mr. Pett's Manuscript in the British Museum, that it was customary, in his time, to hire and victual the shipwrights and caulkers on any emergency, and to discharge them when the work for which they were employed was performed. It also appears that there was at that time a small permanent establishment of artificers for ordinary service in each of the dockyards. Previous to the year 1691 the master shipwrights and artificers at our naval ports were borne on board one of his majesty's ships of war, fitted up purposely for their reception. The average number employed in the several dock-yards in the year 1700, were about 1780; and in 1800 the number of shipwrights were 3776, an increase by no means proportionate to the augmentation of the number of ships and tonnage of the navy during that period, which may be accounted for in some degree by the increased quantity of work that is now performed by any given number of artificers in that class, and by the great saving of labor from the introduction of coppering and copper-bolting of ships, as they do not now require docking near so often as formerly, in order to have their bottoms cleaned and their bolts replaced; for the copper bolts do not decay as the iron bolts did.'

Under the description of shipwrights are included the persons employed in the occupations of mast-making and boat-building, which in private concerns are generally considered as separate branches: but in our dock-yards, the execution of such work is under the direction of distinct officers, denominated master mast-maker, and master boat-builder. The shipwrights are formed into gangs or companies, over whom officers, called quartermen, are placed; each of those gangs, according to the directions of the Navy Board, should consist of twenty men and six apprentices: but the apprentices depend on the proportion they bear to the working shipwrights. The quartermen have the selection of their respective companies; each, according to his seniority, nominating one man in turn, beginning with those who have apprentices.

The artificers and laborers in our dock-yards, when hurt in his majesty's service, are attended by the surgeons, and are allowed 2s. 1d. per day, whatever class they belong to, for six weeks, unless they are able to resume their labor at a shorter period. There is likewise an establishment of superannuation for the different classes, to which they are admitted, if rendered incapable of labor from hurts received, or after an uninterrupted service of thirty years.

A MASTER SHIPWRIGHT is a superior officer

appointed to each of his majesty's dock-yards, to superintend and direct the building and repairing of the different classes of ships, &c. He has the direction and superintendence of nearly the whole operative business of the dock-yard to which he is appointed; in the execution of which he is assisted by other subordinate professional officers, termed 'Assistants to the master shipwright'; one of whom is particularly entrusted with the management and conversion of timber, and is styled 'timber master,' who has also an assistant for measuring all the timber taken into the yard. It is likewise his duty to inspect the quality of all stores received from contractors, which are used in his department, and to attest their fitness for the service; to survey and value all vessels hired or purchased into his majesty's navy; to keep an account and certify to the navy board the quantity of all works performed by contract in the dock-yard; and to keep an account of the earnings of the respective artificers under his superintendence, and to certify the amount from time to time to the clerk of the check. Over the shipwrights and caulkers, an assistant is appointed, who conducts and directs the execution of the work, which is also considered under the superintendence of the master shipwright.

THE FOREMAN OF THE SHIPWRIGHTS, is one of a class of officers between the quartermen and shipwright's assistants, whose duty it is to direct and superintend the building and repairing of ships, and the several works in the docks. There are also foremen afloat, who are appointed to survey and report to the master shipwright the state and condition of the ships and vessels afloat.

THE SHIPWRIGHTS' APPRENTICES, in his majesty's dock-yards, are boys bound to certain persons under the direction of government, for a term of seven years, who, in the course of their apprenticeship, are instructed by some of the deserving shipwrights, in the art of building, caulking, and repairing ships and vessels. They are now divided into two classes, viz. the superior and inferior.

*Superior class.* By the king's order in council, September 20th, 1809, a superior class of shipwrights' apprentices, consisting of twenty-five young men of liberal education, has been established at the royal navy college in Portsmouth dock-yard: and on the 5th of November, 1810, the principal officers and commissioners of his Majesty's navy, gave notice that a plan of education had been established for them. The number of students in this class was at first limited to twelve, but have gradually increased to twenty-five.

The period of apprenticeship is seven years, but for a student who may have previously served in an inferior class of apprentices in his majesty's yards for the space of two years, it is only six years, and only five years for a student who may have previously served in the said class for the space of three years. An instructor in the theory of naval architecture is added to the present establishment of the Royal Naval College, to assist particularly in the instruction of the superior class of apprentices.

**SHIRA**, a river of Scotland, in Argyllshire, which rises in the mountains behind Inverary, and after forming a small lake called Loch Dub, falls into Loch Fyne, near Inverary. It gives name to the valley of Glenshira, through which it runs. Its name, in the Gaelic, is Sio-reidh, i. e. always smooth, the opposite of Ao-reidh, i. e. never smooth. See AO-REIDH.

**SHIRAZ**, the capital of Fars, a noted city of Persia, esteemed the second in the kingdom, is situated near the ruins of the ancient Persepolis. The distant view is rather pleasing than grand, although much enriched by the lofty domes of the mosques, seen among the trees: on entering the town the houses are found to be small and the streets narrow, and the stranger is impressed with but a mean idea of the place which was long esteemed the second city in the empire. It was the residence of Kurim Khan, and bears evident marks of his munificence. It enjoys a salubrious climate, and its environs have been celebrated by several eminent men, among whom was Hafiz, the Anacreon of the east, who was a native of this city, and whose tomb is about half a mile from it. Without the city are several avenues, leading to beautiful gardens, perfumed with flowers, and refreshed by fountains. The population is about 40,000, and the commerce extensive. It has increased of late years, and is principally carried on with Bushire, Yezd, and Ispahan. Its mosques and other public buildings are more numerous than those of Teheran; and the great bazaar, built by Kurim Khan, is a noble structure, in which the different trades of the city have their respective stations assigned them. See PERSEPOLIS.

**SHIRE**, *n. s.* Sax. *scip*, from *scipan*, to divide. A division of the kingdom; a county; so much of the kingdom as is under one sheriff.

His blazing eyes, like two bright shining shields,  
Did burn with wrath, and sparkled living fire;  
As two broad beacons, set in open fields,  
Send forth their flames far off to every shire.  
*Fuerie Queene.*

The noble youths from distant shires resort. *Prior.*

**SHIRE** is the same with county. See COUNTY. County, *comitatus*, is plainly derived from *comes*, the count of the ancient Franks; that is, the earl or alderman (as the Saxons called him) of the shire, to whom the government of it was entrusted. This he usually exercised by his deputy, still called in Latin *vice-comes* (whence viscount), and in English the sheriff, or shire reeve, signifying the officer of the shire; upon whom, in process of time, the civil administration of it totally devolved. See SHERIFF. In some counties there is an intermediate division between the shire and the hundred; as lathes in Kent and rapes in Sussex, each of them containing about 300 or 400 a piece. These had formerly their lathe-reeves and rape-reeves, acting in subordination to the shire-reeve. Where a county is divided into three of these intermediate jurisdictions, they are called trithings, which were anciently governed by a trithing-reeve. These trithings still subsist in the large county of York, where, by an easy corruption, they are denominated ridings; the north, the east, and the west riding.

**SHIRL**, or cockle, in mineralogy. See COCKLE.

**SHIRLEY** (Selina), countess of Huntingdon. See HUNTINGDON.

**SHIRLEY** (Henry), an English dramatic writer of the seventeenth century, who wrote a number of plays, but only one of them seems to have been printed, viz. *The Martyred Soldier*, in 1631.

**SHIRLEY** (James), another eminent English dramatic writer, said to be elder brother to Henry. He was born in London, in 1594, and educated at Merchant Tailor's school, whence he removed to St. John's College, Oxford. He published thirty-nine plays at different times; a volume of Poems in 8vo, 1656; and three Treatises on Grammar. He died in 1666.

**SHIRT**, *n. s. & v. a.* (Sax. *reynē*, *reýnic*;

**SHIRTLESS**, *adj.* (Dan. *shiert*; Goth. and Swed. *skut*). The under linen garment of a man to cover with a shirt: wanting this useful garment.

Shift a *shirt*: the violence of action hath made you  
weak as a sacrifice. *Shakspeare. Cymbeline.*

I take but two *shirts* out with me, and I mean not  
to sweat extraordinarily. *Id. Henry IV.*

When we lay next us what we hold most dear,  
Like Hercules, envenomed *shirts* we wear,  
And cleaving mischiefs. *Dryden.*

Ah! for so many souls, as but this morn  
Were clothed with flesh, and warmed with vita-  
blood,  
But naked now, or *shirted* but with air. *Id.*

Linsey-woolsey brothers,  
Grave mummers! sleeveless some, and *shirtless*  
others. *Pope.*

Several persons in December had nothing over  
their shoulders but their *shirts*. *Addison on Italy.*

**SHIRVAN**, a province in the north of Persia, the largest and most important division of southern Caucasus. It is a triangular peninsula, the point of which stretches into the Caspian; varying extremely in breadth, which, at the extremity of the peninsula, is scarcely sixteen miles, while in the interior part it amounts to 160. It is bounded on the north and east by Georgia and Daghestan: on the south by the Kur, which separates it from Ghilan and Aderbijan. The northern part consists of an extensive plain, enclosed by the mountains that extend towards the sea near Derbend. Numerous streams from the mountains contribute towards the fertility of this plain, at the same time that they render the passage of an army difficult. The plain is interspersed with small woods and clumps of bushes, and the villages surrounded with orchards, vineyards, and mulberry plantations. The second division of Shirvan extends from the coast to the plain watered by the Kur, and is bounded by a higher range of mountains, which run in a south-east course through the province. The higher districts are here the most fertile. The plain along the Kur is about 140 miles in length, and from forty to fifty in breadth. It is in a great degree surrounded with mountains, and being exposed to frequent inundation, is greatly overgrown with rushes. The most elevated tract in Shirvan is that which extends towards Lesghistan. It is intersected by narrow

valleys, in many of which are small lakes, which continue filled in the greatest heat of summer. Shirvan may in general be esteemed fertile, being watered by numberless rivers, some of which fall into the Kur, and others into the Caspian. This province was annexed to the Persian empire in 1500, by Shah Ismael, and continued subject till the decline of the Sefi dynasty. Recently, however, the Russians have obtained possession of all the sea coast. The principal towns are Schamachi and Bak-u.

**SHISHAK, SESAC, or SESACUS,** a king of Egypt, mentioned in Scripture, and believed by Sir Isaac Newton and others to be the same with Sesostris. Some commentators suppose him, with great probability, to have been the brother of Solomon's queen; and that, being offended with his brother-in-law for dishonoring his sister by his subsequent marriages, he had the more readily given encouragement and protection to Jeroboam, though he did not choose to venture a war with such a powerful monarch as Solomon. This appears the more probable from Shishak's conduct after his brother-in-law's death; for having in the fifth year of Rehoboam raised a great army of 60,000 horsemen, 1200 chariots, and an innumerable multitude of Egyptians, Ethiopians, Lybians, &c., he invaded Judah, took Jerusalem, and plundered the palace and temple of their most valuable articles; while he allowed his ally Jeroboam to enjoy his newly acquired kingdom in peace. See 1 Kings, xiv. 25; and 2 Chron. xii. 2-9. See also EGYPT and ETHIOPIA.

**SHITAKOONTHA,** a name of a Hindoo deity Siva. It means the blue-throated; and the fable accounting for the name is often alluded to in the writings of that people. When the ocean was churned, we are told, poison was produced among the fourteen precious articles resulting from that operation. The word, as well as poison, means medicinal drugs. This was swallowed by Siva: and, in the songs of Jayadeva, translated by Sir W. Jones, in praise of Vishnu and Lakshmi, under their names of Krishna and Radha, the following passage occurs (Heri and Narayana, we should premise, are names of Vishnu; and Padma, or the Lotos, of Lakshmi):—“ Whatever is delightful in the modes of music; whatever is divine in meditations on Vishnu; whatever is exquisite in the sweet art of love; whatever is graceful in the fine strains of poetry;—all that let the happy and wise learn from the songs of Jayadeva, whose soul is united to the foot of Narayana. May that Heri be your support who expanded himself into an infinity of bright forms, when, eager to gaze with myriads of eyes on the daughter of the ocean, he displayed his great character of the all-pervading deity, by the multiplied reflections of his divine person in the numberless gems on the many heads of the king of serpents, whom he chose for his couch: that Heri who, removing the lucid veil from the bosom of Padma, and fixing his eyes on the delicious buds that grew upon it, diverted her attention by declaring, that when she had chosen him as her bridegroom, near the sea of milk, the disappointed husband of Parvati drank in despair the venom which dyed his neck

azure. Jones's Works, vol. x. As. Res. vol. iii.

**SHITTAH, n. s.** Heb. A sort of precious wood, of which Moses made the greatest part of the tables, altars, and planks, belonging to the tabernacle.

Bring me an offering of badgers' skins and shittim-wood. Exodus.

**SHITTIM** Wood is supposed to be the wood of the Acacia, which is the only tree that grows in Arabia Deserta. Jerome says it resembled the wood of the white thorn. See CRATAGUS. It is said to have been almost incorruptible.

**SHITTLECOCK, n. s.** Commonly, and perhaps as properly, shuttlecock. Skinner derives it from Teut. *schutteln*, to shake; or Sax. *rceatan*, to throw; and thinks it is called a cock from its feathers. Perhaps it is properly shuttlecork, a cork driven to and fro, like the instrument in weaving, and softened by frequent and rapid utterance from cork to cork.—Johnson. But see SHUTTLE. A cork stuck with feathers, and driven by players from one to another with battledoors.

**SHIUMLA, Choumla or Shumla,** a Turkish fortress in the mountains of the Balkan. Varna and Choumla are called, on account of their great military importance, *the gates of Constantinople*. The town of Choumla, properly so called, is nearly surrounded by a natural rampart, consisting of a portion of mount Haemus, or the Balkan. The steep slopes of this great bulwark are covered with detached rocks, and close, thorny bushes. The nature of the ground makes it a very advantageous position for the Turkish soldier, who, when sheltered by the inequalities of the ground and a few entrenchments, displays great resolution and address. The town is about a league in length and half a league in breadth, and may contain from 30,000 to 35,000 souls. The fortifications are rudely constructed, but its situation in the midst of a vast natural fortress, capable of containing an immense army, with its magazines, &c., secures it from the enemy's artillery. The air is very healthy in the elevated parts of the Balkan, and in the narrow valleys which lie between its ridges. On the other hand, there cannot be a more unhealthy country than that which extends from the Balkan to the borders of the Danube and the Pruth. This difference between the climate of the mountains and that of the plain is the most effectual defence which nature has given to Choumla. In the late war between Russia and Turkey, it was besieged by the troops of the former power from July 20, 1828, until October 25, of the same year, when they retired, after the conquest of Varna, October 11. On the 11th of June, 1829, a decisive victory was gained by the Russians over the Turks, not far from Choumla. The grand vizier commanded the Turks, who are said to have lost 6000 killed, 1500 prisoners, and 60 pieces of cannon, with large quantities of ammunition and baggage. The loss of the Russians amounted only to 1400 killed and 600 wounded.

**SHIVE, n. s.** Belg. *schyve*, of Goth. *skyfa*, to divide. A slice of bread. Obsolete.

**SHIVER**, *v.a., v.n., & v.t.* *Teut. schauren*, of **SHIVERY**, *adj.* [*n.s.*] *Goth. skyfu*, to split or divide. To quake; tremble with some degree of violence; shudder; fall to pieces: break into pieces; shatter: shivery is incoherent; falling easily into fragments or shivers.

The ground with stivred armour trown. *Milton.*  
Give up Laius to the realms of day,  
Whose ghost, yet shivering on Cocytus' sand,  
Expect its passage to the farther strand. *Pope.*

Prometheus is laid

On icy Caucasus to shiver,  
While vultures eat his growing liver. *Swift.*  
Showers of granados rain, by sudden burst  
Disploding murderous bowels, fragments of steel;  
A thousand ways at once the shivered orbs  
Fly diverse, working torment. *Philip.*

**SHIVERS**, in the sea language, little rollers, or round wheels of pulleys.

**SHOA**, or **XOA**, a province of Abyssinia, where the royal line of Solomon lived during their expulsion from the throne. See *ETHIOPIA*.

**SHOAD**, among miners, denotes a train of metalline stones, serving to direct them in the discovery of mines.

**SHOADSTONE**, *n.s.* From *SHED*. See below.

Certain tin stones lie on the face of the ground, which they call *shoad*, as shed from the main load, and made somewhat round by the water.

*Carew's Survey of Cornwall.*

*Shoalstone* is a small stone, smooth without, of a dark liver colour, and of the same colour within, only with the addition of a faint purple. It is a fragment broke off an iron vein.

*Woodward on Fossils.*

The loads or veins of metal were by this action of the departing water made easy to be found out by the *shoads*, or trains of metallick fragments borne off from them, and lying in trains from those veins towards the sea, in the same course that water falling thence would take.

*Id.*

**SHOAD-STONES**, a term used by the miners of Cornwall and other parts of England, to express such loose masses of stones as are usually found about the entrances into mines, sometimes running in a straight course from the load or vein of ore to the surface of the earth. These are stones of the common kinds, appearing to have been pieces broken from the strata or larger masses; but they usually contain mundic, or marcasitic matter, and more or less of the orb to be found in the mine. They appear to have been at some time rolled about in water, their corners being broken off, and their surface smoothed and rounded. The antimony mines in Cornwall are always easily discovered by the shoad-stones, these usually lying up to the surface or very nearly so; and the matter of the stone being a white spar, or debased crystal, in which the native color of the ore, which is a shining bluish-black, easily discovers itself in streaks and threads. Shoad-stones are of so many kinds, and of such various appearances, that it is not easy to describe or know them: but the miners, to whom they are of the greatest use in tracing or searching after new mines, distinguish them from other stones by their weight; for if very ponderous, though they look ever so much like common stones, there is great reason to suspect that they contain some

metal. Another mark of them is their being spongy and porous; this is a sign of especial use in the tin countries; for the tin shoad-stones are often so porous and spongy that they resemble large bodies thoroughly calcined. There are many other appearances of tin shoads, the very hardest and firmest stones often containing this metal. When the miners, in tracing a shoad up hill, meet with such odd stones and earths that they know not well what to make of them, they have recourse to vanning, that is, they calcine and powder the stone, clay, or whatever else is supposed to contain the metal; and then washing it in an instrument prepared for that purpose, and called a vanning shovel, they find the earthy matter washed away, and of the remainder the stony or gravelly matter lies behind, and the metalline matter at the point of the shovel. If the person who performs this operation has any judgment, he not only easily discovers what the metal is that is contained in the shoad, but also will make a very probable guess at what quantity the mine is likely to yield of it in proportion to the ore.

**SHOAL**, *n.s., v.n., & v.t.* *Sax. peole; Belg.*

**SHOALY**, *adj.* [*adj.*] *school*, of Goth. *kule*, full. A crowd; a great multitude; a throng: hence a number of shelving rocks; a sand-bank; shallow sea: as a verb neuter, to crowd; throng: be or grow shallow: the adjective corresponding.

A league is made against such routes and *shoals* of people as have utterly degenerated from nature.

*Bacon.*

Where there be great *shoals* of people which go on to populate without foreseeing means of sustentation, once in an age they discharge part of their people upon other nations.

*Id.*

The wave-sprung entrails, about which faulsen and fish did *shole*. *Chapman.*

The haven's mouth they durst not enter, for the dangerous *shoals*. *Abbot's Description of the World.*

The vices of a prince draw *shoals* of followers, when his virtue leaves him the more eminent, because single.

*Decay of Piety.*

What they met

Solid, or slimy, as in raging sea,  
Tost up and down, together crowded drove  
From each side *shoaling* towards the mouth of hell.

*Milton.*

A *shoal* of silver fishes glides

And plays about the barges. *Waller.*

The watchful hero felt the knocks, and found  
The tossing vessel sailed on *shoally* ground.

*Dryden.*

He heaves them off the *sholes*. *Id.*

The depth of your pond should be six foot; and on the sides some *sholes* for the fish to lay their spawn.

*Mortimer.*

God hath the command of famine, whereby he could have carried them off by *shoals*. *Woodward.*

Around the goddess roll

Broad hats, and hoods, and caps, sable *shoal*;

Thick, and more thick, the black blockade extends.

*Pope.*

**SHOAL**, in sea language, is the same as shallow, and is applied to flats in the water. They say it is good shoaling, when a ship sailing towards shore, they find by her sounding it grows shallower and shallower by degrees, and not too suddenly; for then the ship goes in safety.

**SHOALNESS**, a low point on the north-west coast of North America. Captain Cook thus describes the character of the natives:—‘ While we lay here, twenty-seven men of the country, each in a canoe, came off to the ships, which they approached with great caution, hallooing and opening their arms as they advanced. This, we understand, was to express their pacific intentions. At length some approached near enough to receive a few trifles that were thrown to them. This brought on a traffic between them and our people, who got dresses of skins, bows, arrows, darts, wooden vessels, &c.; our visitors taking in exchange whatever was offered them. They seemed to be the same kind of people that we had lately met with along this coast; wore the same ornaments in their lips and noses, but were far more dirty and not so well clothed. They appeared to be wholly unacquainted with people like us; knew not even the use of tobacco; nor was any foreign article seen in their possession, unless a knife may be considered as such. This indeed was no more than a piece of common iron fitted into a wooden handle. They, however, knew the value and use of this instrument so well that it seemed to be the only article they wished for. Most of them had their hair shaved of cut short off, leaving only a few locks behind, or on one side. As a covering for the head they wore a hood of skins, and a bonnet apparently of wood. One part of their dress was a kind of girdle, very neatly made of skin, with trappings depending from it, and passing between the legs, so as to conceal the adjoining parts. By the use of such a girdle, it should seem that they sometimes go naked, even in this high latitude; for they hardly wear it under their own clothing. The canoes were made of skins, like all the others we had lately seen; except that these were broader, and the hole in which the man sits was wider than in any I had before met with.’ Long. 198° 12' E., lat. 60° N.

**SHOALS, ISLES OF**, or Smith’s Islands, seven islands on the coast of New Hampshire, eleven miles south-east of Portsmouth. Long. 70° 33' W., lat. 42° 59' N. Staten Island, on which is the town of Gosport, belongs to New Hampshire; the rest to Maine. They are inhabited by about 100 fishermen.

**SHOAL-WATER BAY**, a bay on the east coast of New Holland, visited by captain Flinders in 1802, who says that it offers no advantages to ships which may not be had on any other part of the coast, except that the tides rise higher, and that in the winter season fish are more plentiful. Long. of Aken’s Island, situated at its entrance, 150° 15' E., lat. 22° 21' 35" S.

**SHOAL-WATER BAY**, a bay on the west coast of North America. Long. 124° 10' W., lat. 46° 50' N.

**SHOCK**, *n. s., v. a., & v. n.* Saxon *ræoc*; Fr. *choc*; Belg. *schocken*. Conflict; mutual impression of violence; concussion; offence; a pile of corn thrown together; a rough dog: as a verb active, to shake by violence; offend; disgust: as a verb neuter, to meet with violence; be offensive: pile corn in sheaves.

In a full age, like as a *shock* of corn cometh in his season. *Joh.*

Corn tithed, Sir parson, together to get,  
And cause it on *shocks* to be by and by set. *Tusser*  
Reap well, scatter not, gather clean that is shorr,  
Bind fast, *shock* apace, have an eye to thy corn. *Ii.*

Thou, full of days, like weighty *shocks* of corn  
In season reaped, shall to thy grave be borne. *Sandys.*

These her princes are come home again :  
Come the three corners of the world in arms,  
And we will *shock* them. *Shakspeare. King John.*

Thro’ the *shock*

Of fighting elements, on all sides round  
Environed, wins his way. *Milton.*

It is inconceivable how any such man, that hath  
stood the *shock* of an eternal duration without cor-  
ruption or alteration, should after be corrupted or ai-  
tered. *Judge Hale.*

Supposing verses are never so beautiful, yet,  
they contain any thing that *shocks* religion or good  
manners, they are—

Versus inopes rerum, nugaque canoræ. *Dryden.*

Those that run away are in more danger than the  
others that stand the *shock*. *L'Estrange.*

I would fain know why a *shock* and a hound are  
not distinct species. *Locke.*

Such is the haughty man; his tow’ring soul,  
’Midst all the *shocks* and injuries of fortune,  
Rises superior, and looks down on Cæsar. *Addison.*

The French humour, in regard of the liberties they  
take in female conversations, is very shocking to the  
Italians, who are naturally jealous. *Id. Remarks on Italy*

These strong unshaken mounds resist the *shocks*  
Of tides and seas tempestuous, while the rocks,  
That secret in a long-continued vein  
Pass through the earth, the pond’rous pile sustain. *Blackmore.*

Those who in reading Homer are shocked that ‘tis  
always a lion, may as well be angry that ‘tis always  
a man. *Pope.*

And now with shouts the *shocking* armies clos’d:  
To lances lances, shields to shields oppos’d;  
Communal death the fate of war confounds,  
Each adverse battle gored with equal wounds. *Pope.*

Behind the master walks, builds up the *shock*,  
Feels his heart heave with joy. *Thomson.*

The mighty force  
Of Edward twice o’returned their desp’rate king:  
Twice he arose, and joined the horrid *shock*. *Philipps.*

Fewer *shocks* a statesman gives his friend. *Young.*  
Julian, who loved each sober mind to *shock*,  
Who laugh’d at God, and offered to a cock. *Harte.*

**SHOE, n. s. & v. a.** [Plural shoes, an-]  
**SHOE’BOY,** cently shoon, *prt.* and  
**SHOE’INGHORN,** *pass.* *part. shod.*] Sax.  
**SHOE’MAKER,** *ræo*, *reoe*; Belgic  
**SHOE’TIE.** *schor*; Goth. *sko*. The  
cover of the foot, of horses as well as men: to  
fit with a shoe or shoes; cover at the bottom: a  
shoe-boy is the boy who cleans and has the  
care of shoes: shoeing-horn, a horn used to put  
on shoes: hence a low *tool* of any kind: the other  
compounds are plain.

Strong axletree’d cart that is clouted and *shod*. *Tusser.*

Your hose should be ungartered, your *shoe* un-  
tied, and every thing about you demonstrating a  
careless desolation. *Shakespeare.*

Spare none but such as go in clouted shoon,  
For they are thrifty honest men. *Id. Henry VI.*

The smith's note for shoeing and ploughing irons.

*Shakespeare.*

The wheel composed of cricket's bones,  
And daintily made for the nonce,  
For fear of rattling on the stones,  
With thistle down they shod it. *Drayton.*

Madam, I do, as is my duty,

Honour the shadow of your shoete. *Hudibras.*

I was in pain, pulled off my shoe, and some ease  
that gave me. *Temple.*

This hollow cylinder is fitted with a sucker, upon  
which is nailed a good thick piece of tanned shoe-  
leather. *Boyle.*

Unknown, and like esteemed, and the dull swain  
Treads on it daily with his clouted shoon,  
And yet more medicinal tian that moly  
That Hermes once to wise Ulysses gave ;  
He called it hamony. *Milton.*

I have been an arrant shoeing-horn for above these  
twenty years. I served my mistress in that capacity  
above five of the number before she was shod.  
Though she had many who made their applications  
to her, I always thought myself the best shoe in her  
shop. *Spectator.*

If I employ a shoeboy, is it in view to his advan-  
tage, or my own convenience ? *Swift.*

Tell your master that the horses want shoeing. *Id.*

A cobler or shoemaker may find some little fault  
with the latchet of a shoe that an Apelles had  
painted, when the whole figure is such as none but  
an Apelles could paint. *Watts.*

SHOES, among the Jews, were made of leather,  
linen, rush, or wood ; those of soldiers were  
sometimes of brass or iron. They were tied with  
thongs which passed under the soles of the feet.  
To put off their shoes was an act of veneration ;  
it was also a sign of mourning and humiliation :  
to bear one's shoes, or to untie the latchets of  
them, was considered as the meanest service.  
Among the Greeks shoes of various kinds were  
used. Sandals were worn by women of distinc-  
tion. The Lacædemonians wore red shoes. The  
Grecian shoes generally reached to the middle of  
the leg. The Romans used two kinds of shoes ;  
the calceus, which covered the whole foot some-  
what like our shoes, and was tied above with lat-  
chets or strings ; and the solea or slipper, which  
covered only the sole of the foot, and was fas-  
tened with leathern thongs. The calceus was  
always worn along with the toga when a person  
went abroad ; slippers were put on during a  
journey and at feasts, but it was reckoned effemi-  
nate to appear in public with them. Black shoes  
were worn by the citizens of ordinary rank, and  
white ones by the women. Red shoes were  
sometimes worn by the ladies, and purple ones  
by the coxcombs of the other sex. Red shoes  
were put on by the chief magistrates of Rome on  
days of ceremony and triumphs. The shoes of  
senators, patricians, and their children, had a  
crescent upon them, which served for a buckle ;  
these were called calcei lunati. Slaves wore no  
shoes : hence they were called cretati, from their  
dusty feet. Phocion also and Cato Uticensis  
went without shoes. The toes of the Roman  
shoes were turned up in the point ; hence they  
were called calcei rostrati, repandi, &c. In the  
ninth and tenth centuries the greatest princes  
of Europe wore wooden shoes, or the upper part

of leather and the sole of wood. In the reign  
of William Rufus, a great beau, Robert, sur-  
named the horned, used shoes with long sharp  
points, stuffed with tow, and twisted like a ram's  
horn. It is said the clergy, being highly offended,  
declaimed against the long-pointed shoes with  
great vehemence. The points, however, con-  
tinued to increase, till in the reign of Richard II.  
they were of so enormous a length that they were  
tied to the knees with chains sometimes of gold,  
sometimes of silver. The upper parts of these  
shoes in Chaucer's time were cut in imitation  
of a church window. The long pointed shoes  
were called crackowes, and continued in fashion  
for three centuries in spite of the bulls of popes,  
the decrees of councils, and the declamations of  
the clergy. At length the parliament of England  
interposed by an act, A. D. 1463, prohibiting the  
use of shoes or boots with pikes exceeding two  
inches in length, and prohibiting all shoemakers  
from making shoes or boots with longer pikes  
under severe penalties. But even this was not  
sufficient : it was necessary to denounce the  
dreadful sentence of excommunication against  
all who wore shoes or boots with points longer  
than two inches. The present fashion of shoes  
was introduced in 1633 ; the buckle was not  
used till 1670. In Norway they use shoes of a  
particular construction, consisting of two pieces,  
and without heels ; in which the upper leather  
fits close to the foot, the sole being joined to it  
by many plaits or folds. The shoes or slippers  
of the Japanese, as we are informed by professor  
Thunberg, are made of rice straw woven, but  
sometimes, for people of distinction, of fine slips  
of ratan. The shoe consists of a sole without  
upper leather or hind piece ; forwards it is  
crossed by a strap of the thickness of one's  
finger, which is lined with linen ; from the tip of  
the shoe to the strap a cylindrical string is  
carried, which passes between the great and  
second toe, and keeps the shoe fast on the foot.  
As these shoes have no hind piece, they make a  
noise when people walk in them, like slippers.  
When the Japanese travel, their shoes are fur-  
nished with three strings made of twisted straw,  
with which they are tied to the legs and feet, to  
prevent them from falling off. Some people  
carry one or more pairs of shoes with them on  
their journeys, in order to put on new, when the  
old ones are worn out. When it rains, or the  
roads are very dirty, these shoes are soon wetted  
through, and one continually sees a great num-  
ber of worn out shoes lying on the roads, espe-  
cially near the brooks, where travellers have  
changed their shoes after washing their feet. In-  
stead of these, in rainy or dirty weather, they  
wear high wooden clogs, which underneath are  
hollowed out in the middle, and at top have a band  
across like a stirrup, and a string for the great  
toe ; so that they can walk without soiling their  
feet. Some of them have their straw shoes fas-  
tened to these wooden clogs. The Japanese  
never enter their houses with their shoes on ;  
but leave them in the entry, or place them on the  
bench near the door, and thus are always bare-  
footed in their houses, so as not to dirty their  
neat mats. During the time that the Dutch live  
at Japan, when they are sometimes under an  
obligation of paying visits at the houses of the

Japanese, their own rooms at the factory being likewise covered with mats of this kind, they wear, instead of the usual shoes, red, green, or black slippers, which on entering the house they pull off: however, they have stockings on, and shoes made of cotton stuff with buckles in them, which shoes are made at Japan, and can be washed when dirty. Some have them of black satin, to avoid washing them.

SHOES. For a method of making shoes by rivetting, instead of sewing, a patent was taken out in 1809 by Mr. David Mead Randolph, an American. In his specification, he describes that the rivetting, which he proposes to substitute for sewing, is only applicable to the soles and heels of boots or shoes, all the other parts being made in the usual manner. The last which is used for this method is the only implement which demands a particular description. It is first made in wood, of the same figure as the common last, and adjusted in the usual manner to the size and shape of the shoe which is intended to be made or put together upon it. The lower part or sole of the last is then covered with a plate of iron or steel, about the same thickness as a stout sole leather: this plate, being formed to the exact shape which is desired, is fastened down upon the wood by screws or rivets. The iron plate has three circular holes made through it, one at the toe, another about half way between the toe and the heel, and a third at the heel: the holes are about an inch in diameter, and being filled up with wooden plugs, and cut down even with the surface of the iron, they will admit the points of temporary nails to be driven through the leather sole to penetrate into the wood, and fix the sole upon the last whilst the work goes on. The making of the shoe is conducted in the usual manner, until it is ready for putting on the last. To do this, the inner sole is put upon the iron sole of the last; then the upper-leathers are put upon the opposite part, and the edges of the leather are turned down over the edges of the inner sole: the outer sole is then applied over the turning-down, and fastened in a temporary manner upon the last, by driving one or two nails, through both soles, into the wooden plugs before mentioned, which fill up the holes in the iron face of the last. Now, to unite the two soles to the upper-leathers, holes are pierced all round the edges of the sole, and small nails are driven in, which are of sufficient length to penetrate through the sole and the turning-in of the upper-leathers, and also through the inner sole, so as to reach the metal face of the last, and, being forcibly driven, their points will be turned by the iron, so as to clinch within-side, or rivet through the leather, and serve instead of the sewing or stitching commonly employed to unite the sole to the upper-leathers.

Mr. Brunel's machines for making shoes are an improvement of the above plan. He established, not long since, at Battersea an extensive manufactory, chiefly intended to supply the army with this article, where all the operations were performed by the aid of machines, which act with such facility that they can be managed by the invalid soldiers of Chelsea Hospital, the only workmen employed, and most of them disabled by wounds, or the loss of their legs, from any

other employment. Of the shoes made by these machines, the upper-leathers are the same as those of any other shoes, and consist of three pieces; viz. the vamp, or part which covers the upper part of the foot, and the two quarters which surround the heel, and are sewed together behind it; they are also sewed to the vamp at about the middle of the length of the shoe. The sole part of the shoe is composed of the real or lower sole, with its welt, the heel, and the inner or upper sole. The lower sole has an additional border, which is called the runner, or welt, fixed upon its upper side, all round the edge, by a row of rivets, so that it makes a double thickness to the sole towards the edge; but this additional piece is only of small width from the outside of the sole inwards, and gradually diminishes away in thickness to nothing, as it recedes from the edge of the sole, so that the middle part of the sole is only of the same thickness as the single leather. The upper-leathers are made sufficiently large to turn in, all round, beneath the foot, under the edge of the inner sole, for about three-quarters of an inch wide, and the outer sole, reinforced by the welt, is applied beneath, so that the turning-in is included between the two soles; that is, it is included between the edge of the inner sole and the welt, or extra thickness which surrounds the lower sole. To hold the shoe together, a row of rivets is put through the sole, all round the edge, and they are of sufficient length to pass through all the four thicknesses; viz. the lower sole, the welt, the upper-leathers (where they are turned in), and also through the inner sole; and these rivets, being made fast, unite the parts of the shoe together in a much firmer manner than sewing. The rivets have no heads, but are made tapering, and the largest ends are on the outside of the sole, which prevents them from drawing through; and at the same time the strength of the riveting will not be materially impaired by the gradual wearing away of the sole leather.

These rivets prevent the wear in a very great degree, and for this reason there is a greater number of rivets put into the sole than merely those which hold the shoe together. The different nails are, first, the short nails, or rivets, which only penetrate through the single thickness of the lower sole; these are arranged in parallel rows across the tread of the foot, that is, about two-thirds of the length from the heel; there is likewise a double row of short nails, which is carried round parallel to the outline of the toe, at about three-quarters of an inch from the edge, and extends as far as the middle of the foot. Next the tacking nails, which are of a sufficient length to reach through both the sole and the welt, and thus fix the two together: of these, there is a row all round the edge of the foot, nearer to the edge than the row of short nails before mentioned. Lastly, the long nails, which, as before described, fasten the shoe together; these form also a complete row round the edge of the whole shoe, and nearer to the edge than any of the preceding rows. The heel is also fastened on by a row of long nails round its circumference. The heads or thick ends of all these nails appear on the lower surface of the sole, and all contribute to preserve the leather.

from wearing. We must confine ourselves to a description of that part of the machinery which strictly performs shoe-making.

The leather is hardened by passing it between rollers, to produce the same effect as hammering does in the ordinary method of shoe-making. The rollers used for this purpose are made of brass, about five inches diameter, and as much in length; they are mounted in the usual kind of frame, except that instead of screws to hold down the upper roller, and regulate its distance from the lower one, two plain cylindric pins are inserted into the holes which usually receive the screws, and these pins have a strong lever bearing upon their upper ends, to press the upper roller down upon the lower, by the action of a weight at the extremity of the lever. These pins are only about four inches distant from the centre or fulcrum of the lever, and the weight (of about 100 lbs.) is at a distance of four feet from the centre, it therefore presses down the upper roller upon the lower with a force of nearly 1200 lbs. The lower roller has a cog-wheel upon the extremity of its spindle, which is moved by a pinion upon the end of an axis turned by a winch; one man turns this winch, and another puts the soles between the rollers. Two soles are presented together, being laid one upon the other, with the flesh sides of the leather towards each other, and an iron plate is placed between them, which is made thick in the middle, and diminishes every way to the edges, where it is thin. The grain or hair side of the leather of the two soles is outside, so as to be in contact with the rollers when the soles are presented to the machine which draws them in; and, when they have nearly passed through, the man who turns the winch reverses the motion, and rolls them back again, then forwards, and so on for four or five times, in the same manner as the motion for mangling linen. After this operation the leather becomes hard and solid, and much reduced in thickness, particularly at the middle part. The heels being so small cannot conveniently be rolled; but to produce the same effect they are stamped in a fly-press: for this purpose, a heel-piece is put into a small box or cell of cast-iron, of a proper shape to receive it, and a thick plate, which is fitted to the box, being laid upon it, the whole is put beneath the screw of the press, one blow of which is sufficient to press the iron plate upon the leather with a force which will render it hard and solid.

The sole is made complete by joining to it the small semicircular piece at the heel; for this purpose, the parts which are to be joined together are cut bevelled, so that they will overlap without increasing the thickness, and then three or four nails are driven through the bevelled parts to hold them together. To cut the joints bevelled, a simple press is used; the sole is laid flat upon the edge of the bench, and a piece of iron is pressed down upon it by a lever, upon which the workman leans his elbow. The edge of the bench is bevelled and faced with iron, and this, together with the upper piece of iron, guides the knife, so that it will cut the joint bevelled: the heel-piece is then cut in the same manner, but reversed.

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The leather for the sole is next inlaid with short copper or iron nails, which are put through holes in the leather, in the broad part of the foot, where the greatest wear will take place; and there is also a double row of similar rivets, inlaid round the toe part, at about three-quarters of an inch within the edge of the sole. The holes for these nails are first punched in the leather of the sole by a punching machine, and then a second machine cuts the nails, and inserts them into the holes.

The punching machine is moved by the foot of the workman, who is seated before a small semicircular table of cast iron, on which he places the leather. This table is supported by a strong column, rising from the floor to a height of about two feet above the table, which is joined to the column by a projecting bracket, so that the column is on the opposite side to that where the workman is seated. The upper part of the column has two arms, projecting forwards from it towards the workman, and extending over the table; at their extremities they are formed into sockets, to sustain a square iron rod or perpendicular slider, which at the lower end has the piercer or awl screwed into it: one of the sockets guides the upper part of the slider, and the other the lower part, so that it has a freedom of motion in a perpendicular direction, but no other. The slider is caused to descend by means of a treadle moving on a centre pin, attached to the foot of the iron column, beneath the bench; from this treadle an iron rod ascends through a hole in the bench (and also through holes in the arms, which project from the column to sustain the slider), and at the upper end this rod is connected with a lever, which moves on a joint at the upper end of the iron column, whilst the extreme end of the lever is connected with the top of the perpendicular slider. By this arrangement it is clear that the foot, being pressed upon the treadle, will communicate motion by the iron rod and upper lever to the slider and piercer, and force its point through the leather, which is placed upon the small iron table. A short lever and counterpoise are provided to raise up the slider again the instant the pressure is removed. To prevent the piercer striking upon the iron of the table, and breaking the point, a screw is inserted in a piece projecting from the slider, and its point in descending comes to rest upon the upper of the two arms which sustain the slider, and thus stops the descent of the slider at the proper place. The piece of leather for the sole is fixed upon a pattern made of iron plate, cut to the same size and shape as the sole, which is united to it by two sharp gauge pins, which are fixed in the pattern, one at the middle of the tread, and the other in the centre of the heel; and these pins project so far that they will just penetrate through the leather, to hold it fast against the pattern, which is perforated with all the holes which are intended to be pierced in the sole. The leather is applied upon the pattern, and struck with a mallet, so as to force the gauge pins into the leather, and unite the sole and the pattern together; the pattern is then laid flat upon the table of the machine, with the leather uppermost, and is brought beneath the point

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of the piercer, so that it will penetrate in the desired place. To ascertain this place, a small stud or pin is inserted into a hole in the table, in the exact spot where the point of the piercer descends; the stud projects a little above the surface of the table, but is only held up by a spring, so that it can easily be pressed down. The pattern being placed so that any of the holes therein receive the point of the stud, it is evident that, when the pressure of the foot makes the piercer descend, its point will make a puncture in the leather which is fastened upon the pattern, which puncture will be opposite to the hole in the pattern; and, though it perforates the leather quite through the thickness, the point of the piercer cannot be blunted against the iron, because it is received in the hole in the pattern, and the stud descends by the pressure, so that the pattern will lie quite flat upon the surface of the table. In this manner the workman pierces any number of holes in the leather, placing it beneath the point of the piercer by the aid of the pattern, and then pressing the foot to bring the point down and pierce the hole. As soon as the piercer rises he removes the pattern to another hole, and so on. A small piece of iron is fixed just above the leather which prevents its being lifted up and following the piercer when it rises. The piercer passes through a hole in this piece.

The sole being thus pierced with holes is prepared for *nailing*, and the short nails are put into it by a very curious machine, which at the same time forms the nails, by cutting them off from the end of a strip of iron or copper, of the same breadth as the length of the intended nails.

The sole is presented to this machine by laying it upon a small table similar to the last machine, and is directed by means of the same pattern; so that each of the holes in the leather will be successively brought beneath the point of a blunt piercer, which descends by the action of a treadle. In the upper part of the machine is a pair of shears to cut the nails: they consist of a lever, loaded at the extremity with a weight, and connected with the treadle, so that the end of the lever is lifted up when the treadle is depressed by the foot. Near the centre of this lever is a cutter, which is fixed to it and moves with it. Another cutter is supported by the frame, so as to be stationary, and in the proper situation to come in contact with the edge of the moving cutter when the end of the lever is lifted up. The cutters act in a manner similar to a pair of shears, to cut off a small piece from across the end of a slip of iron, which is introduced between the cutters. This piece forms the nail or rivet which is to be put into the hole in the leather; and immediately after it is cut it falls into a tube, by which it is conducted down to a small cell or tube, situated immediately over the leather. In this the nail stands perpendicular, and ready, when the piercer descends, to be forced down into the hole in the leather; because the cell which receives the nail is exactly beneath the point of the piercer, so as to hold it perpendicularly in the proper situation. The workman is seated before the machine, and with his right hand directs the sole, with its pattern beneath

the piercer, in the same manner as before described. In his left hand he holds the strip of iron or copper which is to make the nails; and he introduces the end of it through a small hole which conducts to the cutters, pushing it forward with a gentle force: this causes the end of the strip to enter between the cutters when the shears are open. Then adjusting the sole by the pattern, so that one of the holes in the leather will be beneath the nail contained in the cell, he presses down the treadle: this forces the nail down from the cell into the leather, by the descent of the piercer, and at the same time closes the shears, and cuts off a nail across the end of the strip. The nail immediately descends by the tube into the cell, where it places itself perpendicularly, and ready to be put in its place in its turn. Thus the machine, at every stroke, cuts a fresh nail to supply the place of that which it puts in the leather by the same stroke. The strip of copper is turned over every time to form the nails alternately head and point. When all the nails are put in they are battered down with a hammer; and, as they are but very little longer than the thickness of the sole, this reduces them to an even surface.

The *welt*, or runner, is a narrow slip of leather applied upon the sole, round its edge, to make the sole of a double thickness round the edge, where the upper leather joins to the sole, although the sole is only single within. The welt is made from the feather-edged slips which we have before mentioned, and is fastened to the sole by tacking nails of sufficient length to pass through both the sole and the welt. These nails are arranged all round the circumference of the sole, and the holes are first pierced through the sole by the punching machine, which we have before described, but by a different pattern of iron, which is attached to the sole by its two gauge pins entering the same holes which were made through the leather in the first operation. This pattern is pierced with a row of holes all round the circumference, which are arranged within the former row of rivets, or farther from the edge of the sole; but around the toe and tread of the foot, for half its length, the holes are in double number, or at half the distance that they are in the heel part. This pattern being used in the same manner as before described, the punching machine pierces the sole with holes, exactly corresponding to it; which holes are filled with tacking nails in a separate machine, something similar to the nailing machine before described. But, as the nails are longer, it would be too laborious to cut them by the same motion; the nails are, therefore, cut by a machine made on purpose, and applied to the leather by the nailing machine for long nails. This is made exactly the same as the punching machine before described, but with additional apparatus to supply the nails and put them into the holes. The additional parts are as follow:—A circular plate, or wheel of brass, about nine inches diameter, and of a thickness nearly equal to the length of the nails; it is perforated with a great number of holes, to contain the same number of nails; the holes being made round its circumference, as close together as convenient, and arranged in

four circles, one within the other. The interior space within the circles is formed with six arms like a wheel; and in the centre is a hole, which fits loosely upon an upright centre pin, standing in the centre of a small circular table, which is fixed sideways to the upper of the two arms, which, as before mentioned, project from the vertical column of the machine, and sustain the upper end of the perpendicular slider. Upon this circular table the wheel is supported in a horizontal position, at the height of eighteen or twenty inches above the table, on which the leather is placed, and with liberty to turn upon its centre pin. The wheel is filled with nails when it is used, one being put into every hole of its circumference, with the points downwards; and the holes are sufficiently large to let the nails drop through the wheel, except when their points rest upon the circular table which supports the wheel. At one part of the circumference of this table an opening is cut through it, and a small tube descends from it, to conduct a nail down to the point of the piercer. The motion of the wheel upon its centre brings the nails successively over the opening or mouth of the tube; and therefore each nail in its turn drops by its weight through the hole in the wheel into the tube, which is made so small that the nail must descend with its point downwards, and fall into a small cell, so situated that the nail will stand exactly beneath the point of the piercer when the same is at its highest position. But, when the piercer is depressed by the action of the treadle, its point will act upon the head of the nail, and force it down through the cell into the leather placed upon the table of the machine; the hole in the leather having been previously pierced by the punching machine. The cell which receives the nail is very ingeniously contrived to hold it in a perpendicular direction beneath the end of the piercer. It is situated immediately above the leather, and is conical within, so that the nail drops down into it until it becomes fixed fast; but when the nail is to be forced down by the piercer, the cell opens in two halves, being formed by notches in two pieces of steel, which are only held together by being screwed together at one end, and are made so thin as to spring together, and form a cell for the reception of the nail, although they will readily separate when the piercer forces down the nail. It is during the ascent of the piercer that another nail is dropped down from the wheel through the tube, and received into the cell, whilst its two halves are still kept open by the piercer; or rather, as the piercer at this moment occupies the interior of the cell, the nail is received in the space or open joint at which the two halves of the cell separate, so that the nail lies close by the side of the piercer. But, when the piercer has risen up completely out of the cell, its two halves spring together, and the joint in which the nail is placed being formed with faces inclining inwards, they throw the nail into the cell itself, in which it drops down till it sticks fast; because, as before stated, the cell is smaller at the bottom; and in this situation the nail is certain to be held perpendicular, with its head under the point of the piercer. To turn the

wheel round, so as to supply a fresh nail every time that one has been put into the leather, the edge of the wheel is cut into serrated or sloping teeth; the number of teeth being equal to the number of holes made in each of the four circles to contain the nails. A small detent or click takes into these teeth by a hook, so that it will turn the wheel when moved in one direction, but slide over the teeth when moved in the other direction. The click is jointed to a short lever, fixed upon the upper end of an upright axis, which passes down through the two projecting arms of the main column, so as to be very near the perpendicular slider; and a short lever, fixed to this axis, bears, by the action of a spring, against a wedge fixed to the slider. The action of this mechanism is to turn the wheel round one tooth at a time; thus, when the slider descends, its wedge forces the end of the short lever farther away from it; this movement is communicated by the upright axis and upper lever to the click, which slides over the sloping sides of the teeth of the wheel; but, on the re-ascent of the slider, the wedge allows the lever and click to return by the action of a spring, and the hook of the click, having caught a tooth of the wheel, will turn the wheel round the space of one tooth. In this manner, at every descent of the slider, the click engages a fresh tooth of the wheel; and at every ascent the wheel is turned round upon its centre pin; the weight of the wheel, resting upon the flat circular table, being sufficient to retain it as it is placed.

The nailing machine acts with the same rapidity as the other machines, to put a nail into every one of the holes previously made; and for this purpose the leather is kept upon the same pattern by which those holes were pierced, not only for the purpose of placing the leather so that the nails shall be inserted into those holes, but that the thickness of the pattern may allow the nails to penetrate and project through the leather on the under side. When the nails are all put in, they are beat down with a hammer to drive all the heads to a level with the surface. The leather is then separated from the pattern and put into a frame called the *welting stand*.

A small square table of cast-iron, fixed on the top of a pedestal, in which it is capable of turning round, forms the *welting stand*. For the convenience of the workman, and to enable him to work at the different sides, he remains seated before the table. An iron frame is connected with the table by hinges at one side, so that it can be lifted up or turned down, to lie flat upon the surface of the table; and in this situation it can be fastened down by means of a simple clamp. This frame is intended to hold fast the leather which is placed beneath the frame; the interior opening of the iron frame is nearly of the same size and shape as the sole of the shoe. The sole is placed flat upon the table, in the proper position, which is determined by two gauge pins fixed into the table, and entering the holes made in the sole; then the iron frame, being turned down upon the leather, will enclose the sole as it were with an iron hoop, or raised border all round the edge; and, the frame being

clamped fast down, the sole is confined, as if lying in the bottom of a cell of iron, of the same figure as itself, and with the nail points projecting upwards from the sole. In this frame the welt is applied by laying the strip of leather upon the edge of the sole in contact with the inside of the iron frame, and bending it to follow the curves of the outline of the sole. As fast as any part of the length of the strip is settled to its position, it is attached to the sole by striking it down with a mallet upon the points of the nails. The thin or feathered edge of the strip of leather is put inside, so that the edge of the sole, for about the breadth of half an inch, is of

double thickness; but, within this, the extra thickness diminishes away to nothing, leaving only the thickness of the sole. The ends of the strip of leather which compose the welt, where they join and complete the circuit of the sole, are cut sloping so as to lap over each other, and make a joint, without any increase of thickness or apparent division. When the sole is taken out of this frame, the welt and sole are beat well down together to make a good joint; it is then carried to the cutting-press, in which the edge or outline of the sole and welt are cut smooth, and to the same size; because, as the frame of the weltting machine must be rather less than the sole, in order that the frame may bear upon the edges of the sole all round, and thus hold it fast, the welt, which is moulded or bent round within the frame, will be a small quantity less all round than the sole. To guide the knife in cutting round the edge of the sole, it is confined between two iron patterns, which are made exactly to the size to which the edge is to be pared. They are attached to the sole by two gauge pins fixed into one of the plates, and, passing through the holes in the sole, project far enough on the opposite side for the other plate to be fastened on in its required position, by two holes which receive the ends of the pins.

The *cutting-press* resembles a common lathe. A horizontal spindle is supported in a frame consisting of two standards, erected from a horizontal plate, to sustain the spindle, which passes through a collar in one of these standards, and projects some inches beyond it, having at the extremity a piece of wood flat on the surface, and of the same shape as the sole. Against this flat surface the two iron plates with the sole between are placed, and they are forcibly pressed together by the action of a screw, fitted into a third iron standard, erected from the same horizontal plate, and pressing by means of a lever upon the iron plates exactly opposite the end of the spindle. This pressure causes the spindle to retreat a small quantity in the direction of its length, and then a flat circular plate fixed upon the spindle (in the same situation as the pulley of a common lathe), is made to press against a similar flat plate, which is fastened to the frame, and therefore cannot turn round. By the friction between these two surfaces, the spindle becomes immovable, and the press holds the sole firm, whilst the workman, who is seated before the machine, cuts all round the edge with a drawing-knife, which is made sharp in the middle, and is worked with both hands by having a

handle at each end. When he has pared down that part of the edge which is uppermost, he releases the screw of the press, and a spring then causes the spindle to advance so far as to relieve the flat circular plate, which is fixed upon the spindle, from its contact with the fixed plate. This leaves the spindle at liberty to be turned round, and the sole turns with it, so as to bring up a new part of the edge of the leather to a convenient situation to be pared or cut; and the screw is then turned to fasten the spindle as before described, and at the same time to press the sole between the two patterns. When the edge of the sole is thus cut, it is carried to a grindstone, and ground smooth; the stone is turned with a quick motion, by means of a band and large wheel; the leather is afterwards polished by applying it to the edge of a wooden wheel, on which a little bees'-wax is spread.

The sole, thus re-inforced by the welt, is returned to the punching machine, and, being attached to another pattern, a range of holes is pierced all round the outer edge, through both, just within the former row of tacking nails; after which, by the nailing machine, these holes are filled with nails which project through the upper side of the welt, being longer than any of the former, and being also intended to penetrate through the upper-leather and inner soles, and thus fasten the shoe together. In this state the sole is ready to be put to the upper-leathers.

The *upper-leathers* are prepared for applying to the sole in the same manner as the ordinary shoe, viz. by sewing the vamp, or piece which covers the upper part of the foot, to the two quarters which go round the heel, and also sewing these two quarters together behind the heel. The workmen do not hold the work upon their knees to sew it, but four men work at a square table, the corners of which are cut off, and a small piece of wood projects from each angle; the two pieces of leather which are to be sewed together are laid upon one of these pieces of wood in the proper position to be sewed, and are held fast by an endless strap, which is laid over them, and the workman binds it fast down, by pressing his foot in the strap, like a stirrup. This method of sewing, which is far superior to the common mode, might, from its simplicity, be used by all shoe-makers, and would render their business less unhealthy.

The upper-leathers are put upon a last, and held tight thereupon whilst the sole is applied. This is done by the *clamping machine*, which is a small oval table, supported on a column, but capable of turning round upon the column, to enable the workman to work at any side. In the centre of the table a last is fixed with the sole upwards; it is supported at a height of about six inches from the table. The sole is made of cast-iron in a solid piece with the stem or part by which the last is supported; but the under part, upon which the upper-leathers are to be moulded, is made of wood, for the convenience of altering the figure when necessary. The last is fixed upon the table by means of two steady pins; and a strong pin, which projects from the lower part of the last, and passes

through the table, is bound fast by a wedge, which confines the last firmly upon the table in the same manner as if it was made in a piece therewith. The table has a number of pieces of brass attached to it by hinges, and arranged all round the last in such a manner that they can be turned up against the lower part of the last, and then form clamps, which are exactly adapted to the figure of the lower part of the last, and will therefore clamp or bind the leather firm upon the last at the toe, heel, and every part thereof, except at the flat part of the sole. The brass clamps are of such dimensions that they will touch each other when turned up, and thus form a complete cell or box, in which the lower part of the last will be contained, and the leather confined upon it; but, the cell being made in several pieces or clamps, they can be removed one by one, as found necessary. The clamps are forced up to their situation by means of an independent screw for each, which is tapped in an oblique direction through the edge of the table, and the point forces up the end of a small rod, which is jointed to the clamp near the part where it acts upon the leather; by this means the force of the screw acts to turn the clamp up upon its hinge, and at the same time press it against the leather. When the pressure is released by displacing the end of the small rod from the point of the screw, the clamp will be suffered to fall back upon the table: and, this being done to all the clamps, the last stands insulated in the middle of the table, from which it can be detached by withdrawing the wedge which confines it. The inner sole of the shoe is first put upon the sole of the last, being slightly fastened thereto by two short pins, one of which is driven through the gauge hole in the toe of the sole, and enters a hole made in the last; and the other pin is fixed in the heel part of the last, and enters the hole in the sole. The upper-leathers are now put upon the last in the true position. In this state the last is taken to the clamping machine, and fastened into its place in the centre of the table; the clamps are then turned up one by one, beginning at the heel, and the upper-leathers being pulled up all round by a pair of pincers, so as to make them fit tight upon the last, the clamps are screwed tight. In this state the upper-leathers are made to take the form of the last, being firmly attached thereto, except at the sole part; at this part the leather stands up all round about three-quarters of an inch, which quantity is turned down flat upon the edge of the inner sole (previously fastened upon the sole of the last), and a small quantity of paste is put in to make it stick fast; four or five notches are cut out in the leather at the toe and at the heel, to make the part which is turned down lie flat upon the sole, without folds or overlapping, and then, to make a close contact, the leather is beaten down. Parings of leather are likewise pasted, and stuck flat upon the inner sole for levelling, to make up the sole to the same thickness in the centre as it acquires towards the edges all round by the turning-in of the upper-leathers. In this state the nail which fastened the inner sole to the last is withdrawn, being now unnecessary, and the real sole is applied,

an iron frame or saddle being employed to determine its proper position upon the last. This frame is made of thin iron, and its figure within is similar, and of the same size as the row of nails which project through the sole, and by which the sole is to be riveted into its place; it is made in two halves, which are united by a joint or hinge at the heel part; and at the toe part are two holes, through which a pin can be put to hold the frame together. This pin, as well as the joint pin of the hinge at the heel, projects downwards sufficiently to enter into a hole made in each of the two clamps at the toe and heel, in such a position as to guide the frame, so that it will apply the sole exactly in the proper position.

The sole, when prepared, by inserting all the long nails in the holes, so that their points project through the leather, is put into an iron box or mould, and, a plate being laid upon it, is put into the fly-press, and by a single blow the sole is rendered concave within-side, so as to adapt itself to the last. When it is taken out of the mould, the iron frame before mentioned is put together round the row of nails, the size of the inside of the frame being made exactly of the proper size to receive the projecting points of the nails, and retain them perpendicular to the leather, and prevent them from spreading out. The sole is then applied in its place by the two guide pins of the frame, and by striking upon the heads of the nails, their points penetrate through the turning-in of the upper leather, and also through the inner sole. When they are well entered the iron frame is taken away, by withdrawing its pins, and opening its two halves on their joint, and the nails are driven down into their places. This causes them to project through the inner sole into the shoe, and the points meeting the iron last are turned back, and thus clenched into their places. To render this more certain, the sole of the last is made with a slight groove all round, where the points of the nails will fall, and, the groove being of a semicircular figure, the points are more readily turned thereby, and are all turned the same way, so that they will not interfere.

The shoe is now put together, and, the clamps being relieved and turned down, the shoe is taken off the last; for which purpose the heel of the last is made in a separate piece, and jointed to the other by inclined fittings, and with a tongue or rebate, so that it can be held fast in its place by a single hook or spring catch; but, this being relieved, the shoe draws off the last with the greatest ease, the heel part remaining within the shoe, and is taken out afterwards. The shoe is now carried to the *rivetting last*, where it is put upon a last exactly similar to that of the clamping machine, but fastened down upon a bench, and the sole is smooth without the groove which caused the points of the nails to turn up. Upon this last the nails are beaten down, to rivet all fast, and make the sole smooth within-side; the heel is then put on by laying it in its place, and driving down the long nails which have been put through it by the nailing machine, in the same manner as for the sole. The sole of the shoe is now rasped with a coarse file, to level all the nail-heals, and render the

## S H O E I N G.

leather smooth ; the shoes are then carried to the grindstone, by which they are polished, and finished up in every part, the soles blacked, and polished by the wheel with a composition of bees' wax and ivory black, which renders them glossy : the upper leathers are then brushed by a circular brush, which is turned by the lathe, and the shoes are rendered fit for sale, except those which require binding and lining, with a lining of thin leather, in which case they are finished in the same manner as common shoes.

The Society of Arts have shown a laudable desire to recommend various *machines* to the trade, to enable the workman perform his operations without so much sitting in a bent posture. The first of these was Mr. Holden's, then Mr. Parker's, and next Mr. Stas's, whose machine, being the most approved, demands some description. A small bench, or table, is firmly supported on four legs, at about four feet from the ground ; a circular cushion is affixed upon the bench, having a hollow or basin in the centre of it, with a hole from the bottom of the hollow, quite through the cushion, and also through the centre of the bench. This hole receives a strap, which is doubled, and the two ends sewed together. The last is put into the double of the strap, and it is drawn down by a treadle, so as to hold the last firmly in the hollow of the cushion, which is stuffed soft within-side ; and, as the hole through the cushion is too small for the shoe to pass down, the last can be set in any direction which is most convenient for the sewing ; but, by relieving the treadle, it can be removed in an instant, turned round, and fixed again to sew another part. A seat can be applied in front of the machine, for the workman to rest himself occasionally : this seat is supported by only two legs, and a piece of wood, which projects horizontally from beneath the seat, and enters into a mortise, made in a part of the frame. Upon this the workman sits astride, as if upon a saddle ; and, as his work is held before him at a proper height, he sits in an upright posture, which is not attended with the same prejudicial effects as stooping to work upon the knee. The machine is provided with a small tray, or box, behind the cushion, to contain all the small articles which the work requires ; also a drawer beneath it for tools, &c. ; a whetstone fixed up at a convenient height ; and an anvil, which fits into the hollow of the cushion, so as to lie firmly, to hammer the leather upon instead of a lapstone.

**SHOE OF AN ANCHOR,** a small block of wood, convex on the back, and having a small hole, sufficient to contain the point of the anchor fluke, on the foreside. It is used to prevent the anchor from tearing or wounding the planks on the ship's bow, when ascending or descending ; for which purpose the shoe slides up and down along the bow, between the fluke of the anchor and the planks, as being pressed close to the latter by the weight of the former.

**To SHOE AN ANCHOR,** is to cover the flukes with a broad triangular piece of plank, whose area or superficies is much larger than that of the flukes. It is intended to give the anchor a surer hold of the bottom in very soft and oozy ground.

**SHOEING,** in farriery. Horses, and other animals destined to labor, are shod with iron, in order to defend and preserve their hoofs. As feet differ, so should shoes.

In a treatise on this subject, by Mr. Clark of Edinburgh, the common form of shoes and the method of shoeing are, with great reason, condemned, and a new method recommended, which seems founded on rational principles, and to have been confirmed by experience. 'In preparing the foot for the shoe according to the common method,' our author observes, 'the frog, the sole, and the bars or binders, are pared so much that the blood frequently appears. The common shoe by its form (being thick on the inside of the rim, and thin upon the outside) must of consequence be made concave or hollow on that side which is placed immediately next the foot, in order to prevent its resting upon the sole. The shoes are generally of an immoderate weight and length, and every means is used to prevent the frog from resting upon the ground, by making the shoe heels thick, broad, and strong, or raising cramps or caulkers on them. From this form of the shoe, and from this method of treating the hoof, the frog is raised to a considerable height above the ground, the heels are deprived of that substance which was provided by nature to keep the crust extended at a proper wideness, and the foot is fixed as it were in a vice. By the pressure from the weight of the body, and resistance from the outer edges of the shoe, the heels are forced together, and retain that shape impressed upon them, which it is impossible ever afterwards to remove ; hence a contraction of the heels, and of course lameness. But farther :—

'The heels being forced together, the crust presses upon the processes of the coffin and extremities of the nut-bone : the frog is confined, and raised so far from the ground that it cannot have that support upon it which it ought to have : the circulation of the blood is impeded, and a wasting of the frog, and frequently of the whole foot, ensues. Hence proceed all those diseases of the feet known by the names of founder, hoof-bound, narrow heels, thrushes, corns, high-soles, &c. The bad effects of this practice are still more obvious upon the external parts of the hoof. The crust towards the toe, being the only part of the hoof free from compression, enjoys a free circulation of that fluid necessary for its nourishment, and grows broader and longer ; from which extraordinary length of toe, the horse stumbles in his going, and cuts his legs. The smaller particles of sand insinuate themselves between the shoe and the heels, which grind them away, and thereby produce lameness. All this is entirely owing to the great spring the heels of the horse must unavoidably have upon the heels of a shoe made in this form. This concave shoe in time wears thin at the toe, and, yielding to the pressure made upon it, is forced wider, and of consequence breaks off all that part of the crust on the outside of the nails. Instances of this kind daily occur, insomuch that there hardly remains crust sufficient to fix a shoe upon.'

'It is generally thought that the broader a

shoe is, and the more it covers the sole and frog, a horse will travel the better. But, as has been formerly remarked, the broader a shoe is of this form, it must be made the more concave ; and, of consequence, the contracting power upon the heels must be the greater. It is likewise to be observed that, by using strong broad-rimmed concave shoes in the summer season, when the weather is hot and the roads very dry and hard, if a horse is obliged to go fast, the shoes, by repeated strokes (or friction) against the ground, acquire a great degree of heat, which is communicated to the internal parts of the foot ; and, together with the contraction upon the heels occasioned by the form of the shoe, must certainly cause exquisite pain. This is frequently succeeded by a violent inflammation in the internal parts of the hoof, and is the cause of that disease in the feet so fatal to the very best of our horses, commonly termed a founder. This is also the reason why horses, after a journey or a hard ride, are observed to shift their feet so frequently, and to lie down much. If we attend further to the convex surface of this shoe, and the convexity of the pavement upon which horses walk, it will then be evident that it is impossible for them to keep their feet from slipping in this form of shoe, especially upon declivities of the streets.

‘It is also a common practice to turn up the heels of the shoes into what are called cramps or caukers, by which means the weight of the horse is confined to a very narrow surface, viz. the inner round edge of the shoe-rim and the points or caukers of each heel, which soon wear round and blunt ; besides, they for the most part are made by far too thick and long. The consequence is, that it throws the horse forward upon the toes, and is apt to make him slip and stumble. To this cause we must likewise ascribe the frequent and sudden lameness horses are subject to in the legs, by twisting the ligaments of the joints, tendons, &c. I do not affirm,’ says our author, ‘that caukers are always hurtful, and ought to be laid aside : on the contrary, I grant that they, or some such-like contrivance, are extremely necessary, and may be used with advantage upon flat shoes where the ground is slippery ; but they should be made thinner and sharper than those commonly used, so as to sink into the ground, otherwise they will rather be hurtful than of any advantage.

‘In shoeing a horse, we should in this, as in every other case, study to follow nature : and certainly that shoe which is made of such a form as to resemble, as near as possible, the natural tread and shape of the foot, must be preferable to any other. But it is extremely difficult to lay down fixed rules with respect to the proper method to be observed in treating the hoofs of different horses : it is equally difficult to lay down any certain rule for determining the precise form to be given to their shoes. This will be obvious to every judicious practitioner, from the various constructions of their feet, from disease, and from other causes that may occur ; so that a great deal must depend upon the discretion and judgment of the operator, in proportioning the shoe to the foot, by imitating the natural tread, to prevent the hoof from contracting a bad shape.

‘It is to be remembered that a horse’s shoe ought by no means to rest upon the sole, otherwise it will occasion lameness ; therefore it must rest entirely on the crust : and, in order that we may imitate the natural tread of the foot, the shoe must be made flat (if the height of the sole do not forbid it) ; it must be of an equal thickness all around the outside of the rim ; and, on that part of it which is to be placed immediately next the foot, a narrow rim or margin is to be formed, not exceeding the breadth of the crust upon which it is to rest, with the nail-holes placed exactly in the middle ; and from this narrow rim the shoe is to be made gradually thinner towards its inner edge.

‘The breadth of the shoe is to be regulated by the size of the foot, and the work to which the horse is accustomed : but, in general, it should be made rather broad at the toe, and narrow towards the extremity of each heel, in order to let the frog rest with freedom upon the ground. The necessity of this has been already shown. The shoe being thus formed and shaped like the foot, the surface of the crust is to be made smooth, and the shoe fixed on with eight or at most ten nails, the heads of which should be sunk into the holes, so as to be equal with the surface of the shoe. The sole, frog, and bars, as I have already observed, should never be pared, farther than taking off what is ragged from the frog, and any excrescences or inequalities from the sole. And it is very properly remarked by Mr. Osmer, ‘That the shoe should be made so as to stand a little wider at the extremity of each heel than the foot itself : otherwise, as the foot grows in length, the heel of the shoe in a short time gets within the heel of the horse ; which pressure often breaks the crust, and produces a temporary lameness, perhaps a corn.’ But so much are farriers, grooms, &c., prejudiced in favor of the common method of shoeing and paring out the feet, that it is with difficulty they can even be prevailed upon to make a proper trial of it. They cannot be satisfied unless the frog be finely shaped, the sole pared, and the bars cut out, in order to make the heels appear wide. This practice gives them a show of wideness for the time; yet that, together with the concave form of the shoe, forwards the contraction of the heels, which, when confirmed, renders the animal lame for life.

‘In the flat form of shoe, its thickest part is upon the outside of the rim, where it is most exposed to be worn ; and, being made gradually thinner towards its inner edge, it is therefore much lighter than the common concave shoe : yet it will last equally as long, and with more advantage to the hoof ; and, as the frog or heel is allowed to rest upon the ground, the foot enjoys the same points of support as in its natural state. It must therefore be much easier for the horse in his way of going, and be a means of making him surer footed. It is likewise evident that, from this shoe, the hoof cannot acquire any bad form ; when, at the same time, it receives every advantage that possibly could be expected from shoeing. In this respect it may very properly be said that we make the shoe to the foot, and not the foot to the shoe ; as is but too much the case in the concave-shoes, where the foot

very much resembles that of a cat's fixed into a walnut-shell. It is to be observed that the hoofs of young horses, before they are shod, for the most part are wide and open at the heels, and that the crust is sufficiently thick and strong to admit of the nails being fixed very near the extremities of each. But, as I have formerly remarked, from the constant use of concave shoes, the crust of this part of the foot grows thinner and weaker; and when the nails are fixed too far back, especially upon the inside, the horse becomes lame: to avoid this, they are placed more towards the fore-part of the hoof. This causes the heels of the horse to have the greater spring upon the heels of the shoe, which is so very detrimental as to occasion lameness; whereas, by using this flat form of shoe, all these inconveniences are avoided; and if the hoofs of young horses, from the first time that they were shod, were continued to be constantly treated according to the method here recommended, the heels would always retain their natural strength and shape.

'It has been alleged that, in this form of shoe, horses do not go so well as in that commonly used. This objection will easily be set aside, by attending to the following particulars. There are but few farriers that can or will endeavour to make this sort of shoe as it ought to be. The iron, in forming it, does not so easily turn into the circular shape necessary as in the common shoe; and, perhaps, this is the principal reason why they object to it, especially where they work much by the piece. And, as many horses that are commonly shod with concave shoes have their soles considerably higher than the crust, if the shoe is not properly formed, or if it is made too flat, it must unavoidably rest upon the sole, and occasion lameness. The practice of paring the sole and frog is also so prevalent, and thought so absolutely necessary, that it is indiscriminately practised, even to excess, on all kinds of feet: and, while this method continues to be followed, it cannot be expected that horses can go upon hard ground (on this open shoe) with that freedom they would do if their soles and frogs were allowed to remain in their full natural strength. There is one observation I would farther make; which is, that the shoe should be made of good iron, well worked, or what smiths call hammer-hardened, that is, beaten all over lightly with a hammer when almost cold. The Spanish and Portuguese farriers use this practice greatly, insomuch that many people, who have seen them at work, have reported that they form their horses' shoes without heating them in the fire as we do. It is well known that heating iron till it is red softens it greatly; and, when shoes thus softened are put upon horses' feet, they wear away like lead. But, when the shoes are well hammered, the iron becomes more compact, firm, and hard; so that a well-hammered shoe, though made considerably lighter, yet will last as long as one that is made heavier; the advantage of which is obvious, as the horse will move his feet with more activity, and be in less danger of cutting his legs.'

'The common concave shoes are very faulty

in this respect: for, in fitting or shaping them to the foot, they require to be frequently heated, in order to make them bend to the unequal surface, which the hoof acquires from the constant use of these shoes: they thereby become soft: and to attempt to harden them by heating or hammering when they are shaped to the foot would undo the whole. But flat shoes, by making them, when heated, a little narrower than the foot, will, by means of hammering, become wider, and acquire a degree of elasticity and firmness which it is necessary they should have, but impossible to be given them by any other means whatever; so that any farrier, from practice, will soon be able to judge, from the quality of the iron, how much a shoe, in fitting it to the circumference of the hoof, will stretch by hammering when it is almost cold: this operation, in fitting flat shoes will be the less difficult, especially when it is considered that, as there are no inequalities on the surface of the hoof (or at least ought not to be) which require to be bended thereto, shoes of this kind only require to be made smooth and flat; hence they will press equally upon the circumference or crust of the hoof, which is the natural tread of a horse.'

Mr. Moorcroft, a late ingenious veterinary practitioner in London, avowed a preference to this kind of shoe, which he calls the 'seated shoe,' and which he formed in a die, in the same manner that money is struck in coining. His account of it is as follows:—'The shoe best calculated to answer the purpose,' says he, 'is that so strongly recommended by Mr. Osmer and Mr. Clark. The upper surface of this shoe consists of two parts: an outer part, which is a perfect plane near the rim, corresponding with the breadth of the crust, and called the seat; and an inner part, sloping from the seat, and distinguished by the name of the bevel. The seat is obviously intended to support the crust in its whole extent, the bevel to lie off the sole; and this part, being more or less broad, according to the kind of work proposed to be done, will give the requisite strength to the shoe. As the whole of the crust bears on the seat, it is less liable to be broken than when only a small part of it rests on the shoe. In consequence, likewise, of the crust resting on the flat seat, the weight of the body has a tendency to spread the foot wider in every direction, rather than to contract it, as has been observed to happen with the common shoe: and it has in fact been found, in various instances, that a foot contracted by the common shoe, and afterwards shod with the seated one, has become wider without the horse having been taken from his usual work; and again, that a foot, being of a full size and proper form when first shod with the seated shoe, has retained the same size and form, without the slightest alteration, as long as the seated shoe was used. By the slope or bevel in the shoe, a cavity is formed between it and the sole, sufficient to admit a picker, and to prevent pressure on this part, without the sole itself being hollowed, and consequently weakened. For if it be one of the functions of the horny sole to defend the sensible sole, of which, from its situation and nature, no one can doubt, it must

be evident, that the more perfect it is left, the stronger it must necessarily be, and of course the more competent to perform its office.'

Mr. Coleman, however, states as objections, that the sole may be pressed by this form of the shoe, and that the flat part of the shoe is made of the same breadth at the quarters as at the toe. These objections, however, bear rather on an imperfect practice, than an erroneous principle, in Osmer's mode of shoeing, as may be seen above, where direction is given to slope or bevel the shoe, that a cavity may be formed between it and the sole. But the grand objection of the smiths, probably, to Osmer's shoe, subsists in its being somewhat more difficult to forge than the common one to which they have been accustomed.

Professor St. Bel, who has not on all points reasoned so correctly, observes, 'that the feet of horses at their inferior surface are naturally concave, flat, or convex. Suppose, for instance, a foot well formed and properly concave; a second flat; and a third convex. The inconveniences attending the convex and flat foot will be considerably increased by shoes with a similar surface, because the iron of the shoe being harder than the horn of the hoof presents a smoother and more polished surface, and, consequently, more liable to slip. On this account, therefore, it is, that I have proposed the concave shoe, that is to say, concave in its lower surface, because it represents the natural shape of the foot, and because it fulfills, in every respect, the views and intentions of nature; and I am therefore convinced that it ought to be applied to all good feet. As some cases are to be excepted from every general rule, so here the use of the concave shoe is to be excepted from the case of a flat foot, and especially of a convex one: but it does not follow from this exception that the use of this shoe may not become general in time; because it must be remembered that feet only become flat and convex through bad shoeing, or by some accident, as when a horse is foaled; and that no horses, not even those bred in marshy and low lands, are foaled with this imperfection. Nor can we be justified in accusing nature with having neglected to provide sufficiently for the foundations of this admirable machine, when at the same time the same machine affords us so many convincing proofs both of her wisdom and her providence. It is also of principal importance to determine the weight of the shoe; for it is matter of astonishment to see some horses with shoes weighing each five pounds, making together a burden of twenty pounds of iron attached to their four feet. It is obvious to common sense that such an additional weight fixed to the extremity of the leg must be productive of some inconvenience or other; and, in fact, the muscles are thereby compelled to greater exertion, the ligaments are stretched, and the articulations continually fatigued: and, besides all these evil consequences, the shoe by its weight forces out the nails, and so entirely spoils the texture of the wall, or crust, that it becomes often extremely difficult to fix the shoe to the hoof. The weight which we propose for shoes of different kinds is nearly as follows:

	lb. oz.
1. For the strongest sort of cart-horses . . . . .	2 12
2. For the smaller horses of this kind . . . . .	1 12
3. For the largest coach-horses . . . . .	1 12
4. For the smaller ditto . . . . .	1 4
5. For saddle-horses of any height 1lb. 2oz. to 10	
6. For race-horses . . . . .	5 oz. to 4

By reducing the superfluous breadth of these shoes, their thickness may be increased without making any addition to their weight.'

Mr. Coleman expresses his sentiments of the shoe proposed by Mr. St. Bel in the following words:—' Mr. St. Bel employed a shoe with a flat upper surface; but, from not attending to the very important operation of removing the sole under the heels of the shoe, to every kind of hoof, it frequently failed of success.

' The best form for the external surface of the shoe is a regular concavity; that is, the common shoe reversed. This shoe leaves the hoof of the same figure when shod as before its application. And it is evident that a concavity has more points of contact with pavement and other convex bodies than a flat or convex surface, and that the horse is consequently more secure on his legs. A shoe that is flat externally may preserve the hoof equally well in health; but this form is not so well calculated to prevent the horse from slipping as a concavity. There are two circumstances necessary to be attended to in shoeing, viz. to cut the hoof and apply the shoe. Before the hoof is protected by iron, some parts require to be removed, and others preserved. This is even of more importance than the form of the shoe. But many have attended chiefly to the shoe, and not to its application, or to the hoof; and this error has produced more mischief, and more enemies to the Veterinary College, than all the prejudices and calumnies of grooms and farriers. The first thing to be attended to is to take away a portion of the sole between the whole length of the bars and crust, with a drawing-knife; for the heels of the sole cannot receive pressure without corns. To avoid this, the sole should be made concave, so as not to be in contact with the shoe. If there be any one part of the practice of shoeing more important than the rest, it is this removal of the sole, between the bars and crust. When this is done, the horse will always be free from corns, whatever may be the form of the shoe. Besides this, the heels of the shoe should be made to rest on the junction of the bars with the crust: whereas, if the bars are removed, the shoe is supported by the crust only, and not by the solid broad basis of crust and bars united.

' It is necessary that the sole should be cut before any other part of the hoof be removed. If the heels have been first lowered by the butteris, then possibly there may not be sufficient sole left to enable a drawing-knife to be applied, without reaching the sensible sole; whereas, by cutting the sole in the first instance, we can determine on the propriety of lowering the heels and shortening the toe. The sole can then descend, without the motion being obstructed by the shoe; and any foreign bodies that may have got into this cavity are always forced out when the sole descends, without producing any mischief.

When the shoe is applied, the cavity between the sole and shoe should be sufficiently large at every part to admit a large horse picker, and particularly between the bars and crust. If the sole is naturally concave, a shoe with a flat surface applied to the crust will not touch any part of the sole; and if the sole be flat, or even convex in the middle, or towards the toe, the quarters and heels of the sole will generally admit of being made concave with a drawing-knife, so as not to receive any pressure from a flat shoe. If a shoe with a flat upper surface does not leave ample space for a picker, between the sole and shoe, then it is requisite to make either the sole or the shoe concave. When the sole appears in flakes, and thick in substance, it will be better to make the whole of the sole concave by a drawing-knife; and this operation should always be performed before the toe is shortened or the heels lowered. When we have made the sole hollow, then a shoe with a flat surface will rest only on the crust; but if the sole be flat, or convex, and thin towards the toe and middle of the hoof, so as to prevent the possibility of removing the sole at these parts to form a concavity, then it is necessary to employ a shoe sufficiently concave to avoid pressure, and to admit a picker. In this case, however, the sole at the heels and quarters, even in convex feet, will generally allow of removal with a drawing-knife, and then the quarters and heels of the shoe may be flat. It therefore follows that, where the sole can be made concave, a shoe with a flat surface may with safety be applied; but where parts of the sole, from disease or bad shoeing, become flat, a shoe with a concave surface is required. As the hoof is always growing, and as the shoe preserves it from friction, the toe of the crust requires to be cut once in about twenty-eight days. The more horn we can remove from this part, the sooner it will be proper to apply a shoe thin at the heels, without mischief to the muscles and tendons, and the horse will be less liable to trip.

The bars and frog should never be removed. What is ragged and detached had better be cut off with a knife by the groom than left to the farrier, who will perhaps remove some of the sound parts. Where the frog is not large and projecting, the heels may be lowered by a rasp or the butteris; for in every case we are to endeavour to bring the frog in contact with the ground. The frog must have pressure or be diseased. See *Frog*. Nevertheless, when the frog has been disused for a considerable period, and become soft, it must be accustomed to pressure by degrees. If the quarters are high, and much exceed the convexity of the frog, we should gradually lower the heels, and endeavour to bring the frog and heels of the shoe on the same parallel line. Where work is required of the horse, while the frog is soft and diseased, it may be gradually used to pressure, by lowering the hoof about the tenth of an inch every time of shoeing, until the frog be hard, and equally prominent with the heels; or, if the horse is not wanted, great advantage would be derived from his standing without shoes on a hard pavement. After the hoof has been properly prepared, then it is requisite to apply a shoe, and to vary

its length, breadth, and thickness, at the heel, surfaces, &c., according to the hoof. If the heels of the fore feet are two inches and a half or more in depth, the frog sound and prominent, and the ground dry, then only the toe of the hoof requires to be shortened, and afterwards protected by a short shoe made of the usual thickness at the toe, but gradually thinner towards the heel. For a common sized saddle-horse it may be about three-eighths of an inch thick at the toe, and one-eighth at the heel. The intention is, to bring the frog completely into contact with the ground, to expand the heels, prevent corns, thrushes, and canker. If applied in May or June, when the ground is dry, it may be continued all the summer; and in warm climates, where this is the case, no other protection for the hoof is requisite.'

The professor here observes that, so long as the wear of the hoof is not greater than the supply afforded by nature from the coronet, so long may the short shoe be worn; but in wet weather this is not the case. 'I have known,' says he, 'some light horses to wear them the whole year; but such instances are not common. Nevertheless, the short shoe can be employed on most horses with advantage in summer, when the heels are from two and a half to three inches in depth, and the frog equally prominent; but, unless the hoof has been properly preserved, the heels and frog are generally too low for the short shoe. The toe of the horse requires to be shortened as much as possible; but, if the frog touches the ground, no part of the heels should be cut; and, by pursuing this practice, the heels will frequently grow sufficiently high to receive the short shoe.'

Mr. Lawrence, on the other hand, in his Philosophical and Practical Treatise on Horses, questions, on various grounds, the correctness of the term pressure, as of late years applied to the frog of the horse's foot; asserting that, in great numbers of feet, in their natural and healthy state, the frog is not of sufficient growth or bulk for such purpose; and that the frogs of most horses, even amply furnished by nature with that part, are too sensible and tender to admit of being exposed to constant contact with the hard roads, for which, however, he is a strenuous advocate whenever practicable, as he is for the concavity of the external surface of the shoe, the discovery of which he attributes not to St. Bel, but to Caesar Fiaschi, who lived many centuries past. Mr. Lawrence observes—'By the experiment of weakening or lowering the shoe heels, in order to bring a deficient frog into contact with the ground, however gradually I proceeded, I have lamed several horses. St. Bel also did the same, on the first establishment of the Veterinary College. It is sufficiently obvious that, by such means, the back sinews, as they are commonly styled, must be exposed to unusual extension. Such a plan is perhaps scarcely ever eligible, excepting indeed when necessary to reduce the feet to their proper level, in the fortunate case of a natural luxuriance of growth in the frog, which it is the epidemic madness of farriers and smiths to cut away, in order to the miserable and useless substitute of a thick-heeled shoe. The friction of our

hard roads, indeed of any roads, will always keep within bounds the most luxuriant frogs. In the first shoeing a colt, it is of the utmost importance that his frogs, if he have a sufficient growth of them, which is not always the case, be brought to touch the earth, not, however, by the use of any measures of force, or of setting the foot in an unnatural or uneven position: the paring around, or moderately lowering the crust of the foot, when so deep as to compress and injure the growth of the frog, is yet not only perfectly safe, but highly necessary. It will soon appear whether the horse's frogs and heels be of that nature to endure the concussion of the hard roads, which most assuredly, notwithstanding much confident assertion, too many never can endure; and, if a bruised frog be not very common, all practical horsemen are enough convinced how extremely liable the heels of horses are to contusion and inflammation. In bad cases of this kind, the only, and too much neglected, remedy of the bar-shoe has been already appreciated: in general, to set such feet upon their natural level, all which ought to be attempted, will require shoe-heels of considerable strength.'

This author professes to be unaware of any essential improvement of the shoe of Osmer, with the exception of the revival by St. Bel of the concave external surface, notwithstanding the numerous variations which have been attempted; and represents the shoes of Osmer and Clark, already described, as still of the highest repute; those of the superior kind of farriers being imitations of the former in certain degrees; whilst those of the lower smiths, especially of the country, resemble yet too much the convex surface, internal concavity, inordinate length, and weight of former days.

Mr. Moorcroft formerly published a pamphlet, consisting chiefly of the directions of the French Veterinary School, for preventing a horse from 'striking the foot or shoe against the opposite leg.' This accident happens to the horse in two modes, by which he either strikes the pastern joint, or the shank above, near the inside of the knee: the old English stable terms in this case were knocking, applied to the pastern, and the speedy cut to the shank above. These revived directions produced no more success, nor so much attention, as they originally experienced, and for the following reasons, assigned by Mr. John Lawrence, just quoted, a writer allowed on all hands to be practical. The general cause of knocking and cutting in the horse is mal-conformation, crookedness of the pastern joints, and the toe pointing inward or outward, whence he will strike the opposite leg with either the toe or heel, even if ridden without shoes. Width of chest is no kind of security against this defect: and if any preventive measures by shoeing, recommended by Moorcroft and others, which, beside, have the disadvantage of placing the horse in an unnatural and dangerous position, may have a temporary good effect, it ceases the instant the horse becomes, in the smallest degree fatigued and leg-weary, and even, perhaps, after a few miles travel. On this account, the possessors of horses which wound their legs in action have generally, in former days, and at present,

been under the necessity of adopting the leather guard as their only resource. The same author disputes, on his own experience, the idea promulgated of late, that the running thrush on the horse's foot is invariably caused by bad shoeing, averring that it is often a constitutional defect in the horse; questions the utility of the ancient practice lately revived, of exposing the naked feet of horses to stone pavement, with the view of hardening them; and strongly reprobates another revival of the practice of unenlightened times, on the obvious principles of quackery, namely, the barbarous and useless mechanical extension of naturally narrow heels.

Mr. Bracy Clark, a respectable veterinary surgeon, has published certain experiments on the foot of the living horse. His object appears to be the partial or total abolition of the use of the iron shoe. Whenever the roads are covered with ice, it becomes necessary to have the heels of a horse's shoes turned up, and frequently sharpened, in order to prevent him from slipping and falling: but this cannot be done without the frequent moving of the shoes, which breaks and destroys the crust of the hoof where the nails enter. To prevent this, it is recommended to those who are willing to be at the expense to have steel points screwed into the heels or quarters of each shoe, which might be taken out and put in occasionally. The method of doing this properly, as directed by Mr. Clark, is first to have the shoes fitted to the shape of the hoof, then to make a small round hole in the extremity of each heel, or in the quarters, about three-eighths of an inch in diameter, or more, in proportion to the breadth and size of the shoe; in each of these holes a screw is to be made: the steel points are likewise to have a screw on them, exactly fitted to that in the shoe. Care must be taken that the screw on the points is no longer, when they are screwed into the shoe, than the thickness of the latter. The steel points are to be made sharp; they may either be made square, triangular, or chisel pointed, as may be most agreeable; the height of the point above the shoe should not exceed a quarter of an inch for a saddle horse; they may be made higher for a draught horse. The key or handle that is necessary to screw them in and out occasionally is made in the shape of the capital letter T, and of sufficient size and strength. At the bottom of the handle a socket or cavity must be made, properly adapted to the shape of the steel point, and so deep as to receive the whole head of the point that is above the shoe. In order to prevent the screw from breaking at the neck, it will be necessary to make it of a gradual taper; the same is likewise to be observed of the female screw that receives it, that is, the hole must be wider on the upper part of the shoe than the under part: the sharp points may be tempered or hardened, in order to prevent them from growing too soon blunt; but when they become blunt they may be sharpened as at first. These points should be unscrewed when the horse is put into the stable, as the stones will do them more injury in a few minutes than a day's riding on ice. A draught horse should have one on the point of each shoe, as that gives him a firmer footing in

drawing on ice; but for a saddle-horse, when points are put there, they are apt to make him trip and stumble. When the shoes are provided with these points, a horse will travel on ice with the greatest security and steadiness, much more so than on causeway or turnpike roads, as the weight of the horse presses them into the ice at every step he takes.

Besides the common shoe for horses that have sound feet, there are also others of various shapes, determined by the necessity of the case, that is to say, by the different derangements and diseases to which the horse's foot is liable. Such, for instance, are what farriers call the covered, flat, or convex shoe; the pattern shoe; the shoe for all feet, simple, double, and hinged; the shoe without nails; the half-moon shoe; the Turkish shoe; and the slipper shoe. Eight nails for each shoe are enough for saddle and light draught horses; but, for such as are employed in heavy draught, ten are required. A smaller number, it is found, do not hold the shoe sufficiently fast; and a greater number, by acting like so many wedges, weaken the hoof, and rather dispose the crust to break off than give additional security.

The manner of disposing the nails has differed considerably at different times. Some writers have directed four to be placed on each side of the foot, and the hindmost near the heel: leaving between the two rows of nails a considerable space of the fore part of the foot without any. The nails thus placed certainly confined the foot at the sides and heels, left the toe at liberty, and assisted materially the effect of the sloping surface of the common shoe, in altering the form of the foot from nearly a round to a lengthened figure. Latterly, it has been strongly recommended to place the nails principally at the fore part of the foot, in order to prevent the heels from being confined. And certainly this is a wiser practice than the former; but, as the foot should rest on the shoe in the whole extent of the crust, it may be thought that the best way of connecting them in every part alike would be that of placing the nails at equal distances from each other in the whole round of the shoe.

However, the objection to this is, that when the foot strikes the ground with considerable force, the back part of it becomes a little broader than when it is in the air, or when the foot is at rest. This spreading is not considerable, nor does it extend far along the sides of the foot, but it is sufficient to act upon the hindmost nails, when near the heels; hence arises the necessity for there being a greater distance between the last nail and the heel of the shoe than between any two nails. Accordingly it may be laid down as a general rule that the last nail should not be nearer the heel than from two inches to an inch and a half. Such a distance has been found sufficient to prevent the heels being confined, and not sufficiently great to allow the shoe to spring, and loosen the last nails, as frequently happens when they are farther distant from the heel.

All the nails should be at equal distances from each other, except the two in front, which should be a little wider apart than the rest; this, however, is not a matter of essential consequence;

but it is of importance that there should not be any nail in the middle of the toe. For, generally, the action of the foot on the ground has a direct tendency to push the shoe, as it were, backwards along the foot; and it sometimes happens that the shoe is actually thus displaced; in which case, it necessarily follows that the nail in the middle of the toe must be driven immediately against the sensible parts behind it; whilst the rest of the nails, in great measure, follow the line of the crust, and so avoid doing mischief to the parts within. The nail-holes on the upper surface of the shoe should come through the seat, close to the edge of the bevel, that the nails may have a proper and equal hold on every part of the crust, which will be shown by the clenched ends being each equally distant from the shoe. As the nail-hole is always made with a taper and square pointed punch, a nail with a head of the same form will fit it better than one of any other shape.

To prevent the necessity of frequent removes, several expedients have been put in practice. Sometimes a few nails, of a larger size than the rest, have been so put in that the heads stood considerably beyond the level of the shoe; but when these did not break off, as was often the case, they soon wore down. At other times nails with large heads, tapering to a point, were screwed into the web of the shoe. Of these, one was usually placed at the toe, and one at each heel. And by this contrivance of the screw it was imagined that the nails might be easily replaced when worn out. They are apt, however, to break off at the neck, and are too expensive for common use. There is, notwithstanding, another plan, which, as far as it has been tried, justifies the author in recommending it. This consists in having nails with a lozenge head, or what may be called a double countersink, terminating in an edge, instead of coming to a point. This greater breadth of surface prevents its being rubbed away as fast as a point; the thickness in the middle gives it strength; and the regular taper to the shank causes it to apply exactly to the sides of the hole in the shoe, by which it is equally supported, and prevented from bending or breaking. There should be four nails to every shoe; that is to say, two in the forepart, and one at each heel.

The heads of these nails must be struck in tools, or dies; the four holes in the shoe must be made to correspond with the neck of the nail; and, when the nail is driven, the workman must cover the head with a tool, which will receive its upper part, and prevent its being injured by the hammer. These nails are, in effect, so many caulkings, with the advantages of allowing a more level tread; of being easily replaced, by putting new nails in the old holes; and, by being at a distance from the heel of the shoe, they are not so likely to hurt the opposite leg. The nails and nail-holes, however, employed at the Veterinary College, are very different from those in common use. The latter are stamped with a punch of a particular form: and, the heads being of a conical shape, are received into the nail-holes, so as to preserve their hold as long as the shoe exists. Mr. Spencer is the inventor of

these nails, which, though made of a more durable metal, are little more in price than the common sort.

'The head of the common nail,' says Mr. Coleman, 'is not conical, but nearly square and no part is received into the nail-hole. When the nail is driven into the shoe, up to the head, the farrier generally continues to hammer with great violence; and, as the nail-hole cannot admit the head, the texture of the nail contiguous to the head is shivered, and, in a few days, is broken:—whereas the head of Mr. Spencer's nail operates as a wedge; the more it is hammered, the more closely it is connected with the nail-hole, so as to become part of the shoe. Moreover, the head of the common nail, when not injured by the farrier, projects beyond the shoe; and, when worn out, the shoe is liable to come off. This accident will more frequently happen if the nails are placed in the old nail-holes of the crust, before the nail-holes of the shoe are punched, the farrier should examine the situation of the former nails; and, by having new crust for the nails, the shoe will be more firmly connected with the hoof.'

It now only remains for us to conclude with some few remarks on the shooing of other animals employed in the service of man, and especially the mule, the ox, and the ass.

The shoe for the fore feet of the mule is, in general, very similar to that which the farriers call the bar shoe. It is very wide and large, especially at the toe, where it sometimes projects four inches and upwards beyond the hoof. This excess is given it with a view to enlarge the basis of the foot, which is in general exceedingly narrow in this animal. The shoe for the hind feet is open at the heels, like the horse's shoe; but it is lengthened at the toe, like the preceding one. The former is called in French planche, and the latter florentine. The foot of the ass, having the same shape as that of the mule, requires the same kind of shoe, with this only difference, that the shoe for the fore foot is not closed at the heels, and that its edges do not project so much beyond the hoof. The same form of shoe is used for the hind feet of this animal.

The ox's shoe consists of a flat plate of iron, with five or six stamp-holes on the outward edge to receive the nails; at the toe is a projection of four or five inches, which, passing in the cleft of the foot, is bent over the hoof, so as to keep the shoe in its proper place. In many parts of France, where the ox is used for draft, it is sometimes necessary to employ eight shoes, one under each nail; or four, one under each external nail; and sometimes only two, one under the external nail of each fore foot. In the description here given of the mule's and ass's shoe, we cannot avoid condemning the cruel and ignorant practice of extending the toe of the shoe so far beyond the toe of the hoof. See VETERINARY ART.

SHOOMSKA, one of the Kurile islands, three leagues south of Cape Lopatka, in Kamtschatka. Its inhabitants consist of a mixture of natives and Kamtschadales.

SHOOT, *v. a., v. n., & ḥ.* *Pret.* I shot; *part.*  
SHOOT'ER, *n. s.* *fn. s. ḥ.* shot or shotten. *Sax.*

feðtan: Goth. *skiota*; Swed. *skiuta*. To put forth; emit; push forward; discharge any thing so as to make it fly with speed or violence; to perform the act of shooting; germinate; protuberate; be emitted; move along swiftly: as a noun substantive, the act or impression of any thing emitted: endeavour to strike, or act of striking with a missile; a branch from a main stock: a shooter is one who shoots, or uses a missile weapon.

The archers have sorely grieved him, and *shot* at him. *Genesis.*

Not an hand shall touch the mount, but he shall be stoned or *shot* through. *Exodus xix. 13.*

They that see me *shoot* out the lip, they shake the head. *Psalm.*

None of the trees exalt themselves, neither *shoot* up their top among the thick boughs. *Ezekiel xxxi. 14.*

A grain of mustard groweth up and *shooteth* out great branches. *Mark iv. 32.*

I owe you much, and, like a witless youth That which I owe is lost; but if you please To *shoot* an arrow that self way Which you did *shoot* the first, I do not doubt To find both. *Shakspeare.*

This murderous shaft that's *shot* Hath not yet lighted; and our safest way Is to avoid the aim. *Id.*

The noise of thy cross-bow Will scare the herd, and so my *shoot* is lost. *Id.*

Such trees as love the sun do not willingly descend far into the earth; and therefore they are commonly trees that *shoot* up much. *Bacon.*

If the menstruum be overcharged, metals will *shoot* into crystals. *Id.*

The Turkish bow giveth a very forcible *shoot*, insomuch as the arrow hath pierced a steel target two inches thick; but the arrow, if headed with wood, hath been known to pierce through a piece of wood of eight inches thick. *Id.*

They will not come just on the tops where they were cut, but out of those *shoots* which were water-boughs. *Id.*

The *shooter* ewe, the broad-leaved sycamore. *Fairfax.*

We are *shooters* both, and thou dost deign To enter combat with us, and contest With thine own clay. *Herbert.*

The men *shoot* strong *shoots* with their bows. *Abbot.*

The land did *shoot* out with a very great promontory, bending that way. *Id. Description of the World.*

The tree at once both upward *shoots*, And just as much grows downward to the roots. *Cleaveland.*

Tell like a tall old oak how learning *shoots* To heaven her branches, and to hell her roots. *Denham.*

Light  
*Shoots* far into the bosom of dim night A glimmering dawn. *Milton.*

A pomp of winning graces waited still, And from about her *shot* darts of desire Into all eyes to wish her still in sight. *Id.*

Materials dark and crude, Of spirituous fiery spume, till touched With heaven's ray, and tempered, they *shoot* forth So beauteous, opening to the ambient light. *Id.*

A *shooting* star in Autumn thwarts the night. *Id.*  
Where Tigris at the foot of Paradise Into a gulf *shot* under ground, till part Rose up a fountain by the tree of life. *Id.*

I saw them under a green mantling vine,  
Plucking ripe clusters from the tender shoots. *Id.*

The two ends of a bow shot off, fly from one another. *Boyle.*

When he has shot his best, he is sure that none ever did shoot better. *Temple.*

Men who know not hearts should make examples, Which, like a warning-piece, must be shot off, To fright the rest from crimes. *Dryden.*

Ye who pluck the flowers,  
Beware the secret snake that shoots a sting. *Id.*

I have laughed sometimes when I have reflected on those men who have shot themselves into the world; some bolting out upon the stage with vast applause; and some hissed off, quitting it with disgrace. *Id.*

The liquid air his moving pinions wound, And in the moment shot him on the ground. *Id.*

Thus having said, she sinks beneath the ground With furious haste, and shoots the Stygian sound. *Id.*

A shining harvest either host displays, And shoots against the sun with equal rays. *Id.*

The monarch oak, the patriarch of the trees, Shoots rising up, and spreads by slow degrees. *Id.*

New creatures rise,  
A moving mass at first, and short of thighs; Till shooting out with legs, and imp'd with wings. *Id.*

Let me but live to shadow this young plant From blites and storms: he'll soon shoot up a hero. *Id.*

At first she flutters, but at length she springs To smoother flight, and shoots upon her wings. *Id.*

Heaven's imperious queen shot down from high; At her approach the brazen hinges fly, The gates are forced. *Id.*

As a country-fellow was making a shoot at a pigeon, he trod upon a snake that bit him. *L'Estrange.*

Straight lines in joiner's language are called a joint; that is, two pieces of wood, that are shot, that is, planed, or else pared with a paring chisel. *Moroni.*

That rude mass will shoot itself into several forms, till it make an habitable world: the steady hand of Providence being the invisible guide of all its motions. *Burnet's Theory.*

The last had a star upon its breast, which shot forth pointed beams of a peculiar lustre. *Addison.*

The corn laid up by the ants would shoot under ground, if they did not bite off all the buds; and therefore it will produce nothing. *Id.*

This valley of the Tyrol lies inclosed on all sides by the Alps, though its dominions shoot out into several branches among the breaks of the mountains. *Id. on Italy.*

When you shoot, and shut one eye,  
You cannot think he would deny  
To lend the other friendly aid,

Or wink, as coward and afraid. *Prior.*

Where the mob gathers, swiftly shoot along,  
Nor idly mingle in the noisy throng. *Gay.*

Expressed juices of plants, boiled into the consistence of a syrup, and set into a cool place, the essential salt will shoot upon the sides of the vessels. *Arbutus on Ailments*

A wild where weeds and flowers promiscuous shoot, Or garden tempting wit forbidden fruit. *Pope.*

Not half so swiftly shoots along in air  
The gliding lightning. *Id.*

Now should my praises owe their truth  
To beauty, dress, or paint, or youth,  
'Twere grafting on an annual stock,  
That must our expectations mock;

And, making one luxuriant shoot,  
Die the next year for want of root. *Swift.*

Tell them that the rays of light shoot from the sun to our earth at the rate of one hundred and eighty thousand miles in the second of a minute, they stand aghast at such talk. *Watts.*

The grand aethereal bow  
Shoots up immense. *Thomson.*  
Fired by the torch of noon to tensfold rage,  
The' infuriate hill forth shoots the pillared flame. *Id.*

Pride pushed forth buds at every branching shoot,  
And virtue shrunk almost beneath the root. *Harte.*

SHOOTING, among sportsmen, is the killing of game by the gun, with or without the help of dogs. It is now generally confined to flying or running, especially the first; which, by experience, is found to be the best and most diverting way of shooting; indeed there is scarcely any other than these two in use now among gentlemen, for few will watch by a river side to shoot wild fowl; although, about a century ago, to shoot flying was looked on as a rare accomplishment in a sportsman. It is necessary for any person who sports much to have two guns; the barrel of one about two feet nine inches, which will serve very well for the beginning of the season, and for wood-shooting; the other about three feet three inches, for open-shooting after Michaelmas; the birds by that time are grown so shy that your shots must be at longer distance. But, if you intend one gun to serve for all purposes, a three-feet barrel, or thereabouts, is most proper. You should always have it cocked in readiness, holding your thumb over the cock, lest it go off when you would not have it.

It is generally accounted the best way to aim at the head, if the game fly over your head; but to aim as it were under the belly, if it fly from you; and it will be best to let the game fly a little past you before you fire, for so doing the shot will the better enter the body. Shot delivered from a gun in general lose or decrease half the quantity every ten yards, or thereabouts; so that at forty yards there will not be thrown in above a fourth of what would be into the same space at twenty yards. From which it appears that, if you take aim a foot before a cross shoot at forty yards, you will be the most likely to meet the bird with the centre shot; and which is looked upon to fly the strongest, and to be the more efficacious at long distances, than the diverging shot; for, whatever be the cause of their diverging, it must in some degree retard their motion. But, if there be a brisk wind, it will certainly bend the course of the shot; you must therefore consider, whether the wind blow with the bird, or against it; if it blow with it, you need little more than to observe the general rule; because the wind helps the bird forward nearly as much as it diverts the shot: but, if it fly against the wind, the shot declines more than the bird is retarded, and therefore you ought to take aim at a greater distance before the bird.

One good pointer in the field at a time, if you have patience to attend him, will be sufficient for two men to shoot with; but if you have an old spring spaniel, that is so well under command that you can always keep him near you,

such a dog may be used with your pointer with great advantage: as he will better find birds that are wounded, and also spring such as are near you, which you otherwise might pass. But if you should be fond of hunting many pointers together in a field, as is frequently done, you should not have more than one amongst them who has been taught to fetch his game; lest, by endeavouring to get it from each other, they should tear it. Two persons in the field with guns are better than more at partridge shooting; who should with patience pay a due attention to each other. When your dog points, walk up without any hurry, separating a few yards, one to the right, the other to the left of your dog: if a covey spring, never shoot into the midst of them, but let him on the left single out a bird which flies to the left, and him on the right a bird to the right, that you may not interrupt each other, nor both shoot at the same bird, and readily fire at the first aim. Let each of you mark the fall of his bird, and immediately run to the place; and if the dog do not secure it, or the bird should be only wounded, and have run, put him upon the scent; but if your dog understand his business, and will fetch his game, it is better to trust to him, and load again as quick as you can. It will always be of great use, and save much time and trouble, to have a person without a gun, to mark the flight of the birds. If a single bird be sprung, let him take the shoot to whose side it flies: the bird being killed, cause your dog to lie by it whilst you load, lest he spring other birds that are near you. If you trace the birds to a hedge, double the row by walking one on each side, taking your dog on the ditch side: here, if you have a spaniel, he will be of great use; as you may make him go along in the ditch, and your pointer on the other side; by which means you will not pass a bird, and one of you will most likely get a good shoot at it. Your own judgment, with very little experience, will best direct where the birds are most likely to be found at different times of the day, according to the grounds you have to hunt in. A fowling-piece should not be fired more than twenty or five-and-twenty times without being washed; a barrel, when foul, neither shoots so ready, nor carries the shot so far as when clean. The flint, pan, and hammer, should be well wiped after each shot; this contributes greatly to make the piece go off quick, but then it should be done with such expedition that the barrel may be re-loaded whilst warm. The flint should be frequently changed, without waiting till it misses fire before a new one is put in. Fifteen or eighteen shots, therefore, should only be fired with the same flint; the expense is too trifling to be regarded, and, by changing it thus often, much vexation will be prevented. A gun, also, should never be fired with the prime of the preceding day; it may happen that an old priming will sometimes go off well, but it will more frequently contract moisture and fuse in the firing; then the object will most probably be missed, and that because the piece was not fresh primed.

Some attention is requisite in loading a piece; the powder should be only slightly rammed

down, for which purpose it is sufficient to press the ramrod two or three times on the wadding, and not (as the usual practice is) to ram down the wadding by main force, by drawing up the ramrod, and then returning it into the barrel with a jerk of the arm, many successive times. For, by compressing the powder in this violent manner, some of the grains will necessarily be bruised, whilst the explosion will not be so quick, and the shot will be spread wider. In pouring the charge of powder into the barrel, care should be taken to hold the measure as much as possible in a perpendicular line, that the powder may the more readily fall to the bottom. It is even of service to strike the butt end of the gun gently on the ground, in order to detach those grains of powder, which, in falling down, adhere to the sides of the barrel. The shot should never be rammed down tight: after having given a stroke on the ground with the butt-end of the gun, in order to settle it, the same as for the powder, the wadding should then be gently put down, but much less close than that over the powder; for, when the shot is wadded too tight, it spreads wide, and the piece will recoil. In this, therefore, as well as in every other mode of loading, the sportsman should never carry his gun under his arm, with the muzzle inclined to the ground; that practice at all times loosens the wadding and charge too much: sometimes produces the loss of shot, and always indicates laziness in the shooter, and indifference to the sport.

When the piece is fired, it should, if possible, be reloaded immediately, whilst the barrel is warm, lest, by delaying it, a certain moisture should be formed in the barrel, which would retain a part of the powder when pouring in the charge, and hinder it from falling to the bottom. Powder, also, will imbibe moisture from the air, and, therefore, it is of additional advantage to load the piece whilst the barrel is warm, because some part of the moisture will be thereby evaporated. For the same reason, the sportsman should fire off a little powder before he loads the first time; for it has been found, even in the driest seasons, that the coldness of the barrel, and perhaps some little moisture condensed in its cavity, have sensibly diminished the force of the powder in the first discharge.

Some sportsmen prime before they load; this may be proper when the touch-hole is enlarged, and the barrel is very thin at that place, because, in this case, if the piece is not first primed, it will in loading prime itself, which diminishes the charge: but, when the touch-hole is of its proper size, the piece should never be primed until after it is loaded; for then it will be known, from the few grains of powder which usually make their way into the pan, that the touch-hole is clear and unobstructed; and, on the contrary, if no grains come through, that it will be proper to strike the butt-end of the gun smartly with the hand, and to prick the touch-hole till they appear. But, whether the practice is to prime before or after loading the piece, it is highly proper, after every discharge, to prick the touch-hole, and what is still better, to guard against all remains of fuse or squib, by inserting into

the touch-hole the feather of a partridge's wing, which will not only clear it of these dangerous remains, but, if the piece is delayed to be recharged, will take away all humidity that may be contracted there.

Every sportsman has his own manner of bringing his gun up to his shoulder, and of taking aim; and each follows his own fancy with respect to the stock of his fowling-piece, and its shape. Some like it long, others short; one prefers it straight, another bent. And, although there are some sportsmen who shoot equally well with pieces stocked in different ways and shapes, yet certain principles may be laid down as well upon what is the proper length, as upon the proper bent, that the stock of a gun should have. But in the application such principles are very frequently, nay, most commonly, counteracted, by the whim or the particular convenience of the shooter. Generally speaking, however, it is certain, that for a tall long-armed man the stock of a gun should be longer than for one of a less stature and shorter arm. That a straight stock is proper for him who has high shoulders, and a short neck; for, if it be much bent, it would be very difficult for him, especially in the quick motion required in shooting at a flying or running object, to place the butt of the gun-stock firmly to the shoulder; the upper part alone would in general be fixed, which would not only raise the muzzle, and consequently shoot high, but make the recoil more sensibly felt than if the whole end of the stock were firmly placed on the shoulder. Besides, supposing the sportsman to bring the butt home to his shoulder, he would scarcely be able to level his piece at the object. On the contrary, a man with low shoulders, and a long neck, requires a stock much bent: for, if it is straight, he will, in the act of lowering his head to that place of the stock at which his cheek should rest, in taking aim, feel a constraint, which he never experiences, when, by the effect of the proper degree of bent, the stock lends him some assistance, and, as it were, meets his aim half-way. Independently, however, of these principles, the application of which is subject to a variety of modifications, we venture to advise the sportsman in the choice of a fowling-piece, that a long stock is preferable to a short one, and, at the same time, rather more bent than usual; for a long stock sits firmer to the shoulder than a short one, and particularly so when the shooter is accustomed to place his left hand, which principally supports the piece, near to the entrance of the ramrod into the stock. The practice of placing that hand near the bridge of the guard is undoubtedly a bad one: the aim is never so sure, nor has the shooter such a ready command over his piece, as when he places his hand near the entrance of the ramrod, and at the same time strongly grasps the barrel; instead of resting it between his fore-finger and thumb, in conformity with the general custom. It may, therefore, be depended upon, that a stock bent a little more than ordinary is better for shooting true than one too straight, because the latter, in coming up to the aim, is subject to the inconvenience of causing the sportsman to shoot too high.

—We would also advise him to have his fowling-piece a little elevated at the muzzle, and the sight small and flat; for the experienced well know, that it is more usual to shoot low than high. It is, therefore, of service that a piece should shoot a little high, and then, the more flat the sight, the better the line of aim will coincide with the line of fire, and in consequence the gun will be less liable to shoot low.

The method by which to avoid missing a cross-shot, whether it be flying or running, is not only to take aim before the object, but likewise not involuntarily to stop the motion of the arms, at the moment of pulling the trigger; for the instant the hand stops in order to fire, although the space of time be almost imperceptible, the object, if a bird, gets beyond the line of aim, and the shot will fly behind it; and if a hare or rabbit be shot at in this manner, whilst running, and especially if at a distance, the animal will only be slightly struck in the buttocks, and will be taken but by hazard. When a bird, however, is flying in a straight line from the shooter, this fault can do no harm; the object can scarcely escape, if the piece be but tolerably well directed, unless, indeed, it is fired at the moment the game springs, and before the birds have taken a horizontal flight. In that case, if the hand stop ever so little at the instant of firing, the sportsman will shoot low, and inevitably miss the mark. It becomes, therefore, extremely essential to accustom the hand, in taking aim, to follow the object, without suspending the motion in the least degree, which is a capital point towards acquiring the art of shooting well: the contrary habit, which is very difficult to correct, when once contracted, prevents that person from attaining perfection in the art, who, in other respects, may eminently possess quickness of sight and steadiness of aim.

Nor is it less essential in a cross-shot to aim before the object in proportion to its distance, at the time of firing. If a partridge, for instance, fly across at the distance of thirty or five-and-thirty paces, it will be sufficient to take aim at the head, or, at most, but a small space before. The same rule will nearly hold in the cases of shooting quails, woodcocks, pheasants, or wild ducks, although these birds move their wings slower than the partridge. But, if the object be fifty, sixty, or seventy paces distant, it then becomes necessary to aim at least half a foot before the head. The same practice should be observed in shooting at a hare or rabbit when running in a cross direction, making due allowance for the distance, and for the swiftness of the pace, which is not always the same. It is also proper, in shooting at an object very distant, to take aim a little above it, because shots, as well as balls, have but a certain range in point blank, beyond which each begins to describe the curve of the parabola.

When a hare runs in a straight line from the shooter he should take his aim between the ears, otherwise he will run the hazard either of missing, or at least of not killing dead, or, as it is sometimes called, ‘clean.’ A true sportsman, who has the ambition of shooting well, is not content with only breaking the wing of a partridge, or the thigh of a hare, when he shoots at a fair distance

for, in such case, the hare or the partridge ought to be shot in such a manner that it should remain in the place where it falls, and not require the assistance of dogs to take it. But if he shoots at a great distance it is no reproach that the partridge is only winged, or the hare wounded, so that it cannot escape.

Practice soon teaches the sportsman the proper distance at which he should shoot. The distance at which he ought infallibly to kill any kind of game with patent shot (No. 3), provided the aim be well taken, is from twenty-five to thirty-five paces for the footed, and from forty to forty-five paces for the winged game. Beyond this distance, even to fifty or fifty-five paces, both partridges and hares are sometimes killed, but, in general, hares are only slightly wounded, and carry away the shot; and partridges, at that distance, present so small a surface, that they frequently escape untouched between the vacant spaces of the circle. Yet it does not follow that a partridge may not be killed with No. 3, patent shot, at sixty, and even seventy paces distance; but then these shots are very rare. Those who know the range of a fowling-piece, and the closeness of its shot, shrug up their shoulders at the romances of sportsmen who, according to their own accounts, daily kill with shot (No. 3) at the distance of ninety and 100 paces. Nay, some even go so far as to assert that they have killed, with this sized shot, hares at 110 paces, and pheasants at 120. It cannot, however, be denied, that with shot No. 5, a man may have killed a hare or a partridge at 110, or possibly at 120 paces; but then these shots are so extraordinary, and occur so seldom, that the whole life of a sportsman will scarcely afford more than two or three instances; and when it does happen it will be found to be by a single pellet, which, by great chance, has hit either the wing or the head of the partridge, or has struck the head of the hare, by which it is stunned, or perhaps has penetrated the small part of the shoulder, where there is, to prevent the wound being mortal, only a very thin skin, which, being stretched by the animal in running, is thereby rendered more easy to be pierced by the shot.

For expertness in finding the game a sportsman must pay attention to the difference of the seasons, and the weather; to the temperature of the air, and even to those hours of the day which are more or less favorable for shooting. In warm weather he should hunt for the game in plains and in open grounds, at the same time bearing in mind that, during the heat of the day, the birds frequent moist places, marshes where there is little water and much high grass, the sides of rivers and brooks, and hills exposed to the north. But, in cold weather, they will most commonly be found on little hills exposed to the south, along hedge-rows, among the heath, in stubbles, and in pastures where there is much furze and fern. In hard frosts they get into thickets, low places, and marshes, where they seek to shelter themselves from the cold, as well as the heat, in different seasons. The greatest part, however, of these rules will only apply when the weather is extremely hot or severely cold, at both of which times the hares and partridges almost to-

tally desert the plains and open grounds. The game is more easily approached, or, in the language of sporting, 'lies better,' in covert than in open places: a double advantage is therefore obtained by hunting for them in the former. He should, at all times of the shooting season, go out in the morning before the dew is off. At that time the shepherds and their flocks, the husbandmen and their teams, have not entirely spread over the fields, and have as yet sprung but a small quantity of game; the scents of the preceding night will also be more warm, and the dogs will hit them off better. Besides, if he be not early, he loses such opportunities of shooting as he will not meet again during the remainder of the day. All these advantages, therefore, greatly counterbalance the notion generally received, that, as the birds will not lie well while the ground is wet, the sportsman should not go out early in the morning, or before the dew is gone off.

The color of the dress which the shooter should wear is worthy of notice. Green is unquestionably the best in the early part of the season, whilst the leaves remain on the trees. For, if he be clad in a glaring color when the face of the country retains its verdure, the game will perceive his approach more easily, and from a greater distance. In winter, for the same reason, his dress should be composed of a dark brown, or some color resembling that of the dead leaf.

It is best to hunt as much as possible against the wind, not only to prevent the game from perceiving the approach of the sportsman and his dog, but also to enable the dog to scent the game at a greater distance. We say as much as possible, because in advancing and returning upon his steps in order to range the ground well, the shooter cannot always keep the advantage of the wind. When, therefore, it is proposed to hunt any particular tract of country in which game is expected to be found, it is indispensably necessary to take the wind, and it behoves the shooter to range and quarter his ground in such manner and direction as to preserve it in his favor.

He should never be discouraged from hunting and ranging the same ground over and over again, especially in places covered with heath, brambles, high grass, or young coppice-wood. A hare or rabbit will frequently suffer him to pass several times within a few yards of its form without getting up. He should be still more patient when he has marked partridges into such places; for it often happens that, after the birds have been sprung many times, they lie so dead that they will suffer him almost to tread upon them before they will rise. Pheasants, quails, and woodcocks do the same. He should always keep a sharp eye, and carefully look about him, never passing a bush or a tuft of grass without examination; but he should never strike either with the muzzle of his gun, for the reasons assigned where we speak of wadding. It is also proper to stop every now and then; for this interruption of motion frequently determines the game to spring, which would otherwise have suffered him to pass. He who patiently beats and ranges his ground over and over again, without being discouraged, will always kill the greatest

quantity of game ; and, if he be shooting in company, he will find game where others have passed without discovering any. As soon as he has fired he should call in his dog, and make him lie down until he has re-loaded his piece ; for, without this precaution, he will frequently have the mortification to see the game rise when he is not prepared to shoot.

In shooting in an open country, one of the most essential points to be observed is, to mark the place where the partridges alight ; therefore, when he has killed his bird, he should not immediately run to pick it up, or attend to make his dog bring it to him, but he ought to follow the others with his eye until he sees them settle, or as far as his sight can extend, without interruption from a wood or a hedge. In the latter case, although he have not been able to distinguish the exact spot on which they have alighted, yet he may tolerably well guess whereabout they are, especially if acquainted with the country in which he is shooting. And, when two or more sportsmen shoot in company, each should mark the birds which fly on his own side. These general rules will, with equal propriety, apply to all game of course or feather. We might next proceed to the detail of particular directions for hare and rabbit, partridge, pheasant, grouse, woodcock, snipe, and wild fowl shooting ; but, as these would draw this article to too great a length, we shall conclude it with a few observations respecting guns, powder, and shot.

*To make gun barrels of a fine brown color.*—As a brown barrel seems to be the most pleasing to a sportsman, the following is a certain and easy method of giving it this hue :—Rub your barrel bright with sand paper, or if bright, scour it with dry brickdust to take off all greasiness, and fit a stick or piece of wood into the muzzle long enough to hold it by. Bruise roughly about half an ounce of stone-brimstone, and sprinkle it over a gentle fire either of wood, or coal, or charcoal ; hold your barrel over the smoke, turning and drawing it backward and forward until it be equally tinged all over ; this done, set it in a cellar or damp room till next day, in which time you will find it has thrown out a fine rust, over which you may draw your finger to spread it even, and let it stand another day. If you perceive any parts that have not taken the rust, scour such parts bright, and repeat the above operation. It is then to be polished with a hard brush (first rubbed with bees'-wax), and afterwards with a dry woollen or rough linen rag, which will make it look of a beautiful brown color. This rubbing must be repeated every day so long as it throws out any roughness. No oil or grease should come on it for some time, as that may bring off the rust in places ; but if by neglect it should get so strong a roughness that you cannot get it down with common rubbing, in that case wipe it over with sweet oil, and rub it off gently with a clean linen rag, and the next day you may polish it down with your brush as before directed.

*Directions for keeping your guns in order.*—If your lock and furniture be bright, the best way to save the trouble, as well as to prevent the damage that may be done by unskilful polishing,

is never to suffer them to rust, which may easily be prevented by frequently rubbing all the bright parts with a small brush, dipped in sweet oil, which should be well rubbed off with a linen rag : and this should never be neglected both before and after using it. It is needless to take the lock often to pieces : if you take it off and brush it with plenty of oil, and pull up the cock and hammer a few times, the dirt with the oil will work itself out, which is to be wiped off, and a little clean oil put on those parts where there is any friction will answer the purpose.

*To wash out the barrel.*—Fill it either with cold or warm water, and empty it, and let it stand a few minutes, and the air and moisture will soften the soil left from the firing of the powder, so as to come off the easier. You may use sand with your rag or tow to wash it out, which will remove any of the soil that sticks hard to it without hurting its smoothness. Care must be taken to wipe it very dry, and, if it is to be set by for a time, it will be proper to wipe it out with an oily rag, and to stop the muzzle with the same, otherwise it will be apt to rust.

*Of the stock, lock, &c.*—The wood which is most commonly employed for the stock, and which appears the best for the purpose, is walnut. It is only necessary, however, to observe, that the grain be even and close, and as free as possible from knots and burs, which, though they may add to the beauty of the stock, seldom fail to take away from its strength, unless they are confined entirely to the butt part. As to the curvature, no particular degree can be assigned as a standard ; different persons requiring different degrees, according to the length of their neck, and to the manner in which they hold their head whilst taking aim. This, however, as well as the length of the butt, which depends partly upon the circumstances just mentioned, but chiefly upon the length of the arms, can be determined with great accuracy by the gunsmith from observing the manner in which the shooter presents his piece and takes his aim.

With regard to the locks, we shall only observe that the genius and industry of the English workmen have already brought them to such a degree of elegance and perfection that we have scarcely any thing farther to hope for, or require. The real improvements are not confined to any particular maker ; and, though the minutiae peculiar to each may determine the purchaser in his preference, no person need fear much disappointment in the essential qualities of a lock, provided he goes to the price of a good one. It is of much more consequence to the excellence of a lock, that the springs be proportioned to each other, than that they should all be made very strong. A moderate degree of force is sufficient to produce the required effect ; and whatever exceeds this proves detrimental, by rendering the trigger difficult to draw, or producing such a stroke as breaks the flints, or throws the piece from the direction in which it was pointed. If the main-spring be very strong, and the hammer-spring weak, the cock is often broken for want of sufficient resistance to its stroke, until it is stopped all at once by the check of the lock-plate. Whilst, on the other hand, if the hammer-spring be stiff, and the main-

spring weak, the cock has not sufficient force to drive back the hammer. And, in both cases, the collision between the flint and steel is too slight to produce the necessary fire. The face of the hammer, also, may be too hard or too soft. The former is known by the flint making scarcely any impression upon it, and the sparks being few and very small. The latter by the flint cutting deep into the hammer at every stroke, whilst the sparks are also few in number, and of a dull-red color. When the strength of the springs, and the temper of the hammer, are in due degree, the sparks are numerous, brilliant, and accompanied with a considerable whizzing noise. To explain these differences, it is necessary to observe that the sparks produced by the collision of flint and steel are particles of the metal driven off in a strongly heated state, and which, falling among the powder, inflame it instantly. By snapping a gun or pistol over a sheet of white paper, we may collect these sparks, and, by submitting them to a microscope, demonstrate the fact. If the sparks be very brilliant, and accompanied with a whizzing noise, we shall find the particles collected on the paper to be little globules of steel, which have not only been melted, but have actually undergone a considerable degree of vitrification from the intensity of the heat excited by the collision, their surface exactly resembling the slag thrown out from an iron foundry. When the face of the hammer is too hard, the particles which the flint strikes off are so small that they are cooled before they fall into the pan; and, when the hammer is too soft, the particles driven off are so large as not to be sufficiently heated to fire the powder. We think the conical form of the touch-hole a real improvement; but do not approve of its widening so much as it does in the patent-breech, as the force of the fuse against the opening into the pan is greatly increased by it. Gold pans are of very little advantage; for, as the iron must be softened before they can be applied, it is very liable to rust, and thus destroy its connexion with the gold; the tin, also, by means of which the gold lining is fixed, is frequently melted by the fire of the fuse being directed upon the bottom of the pan, and the gold thereby detached from its hold: this will happen more readily when the touch-hole is placed very low, and when, from its form or width, the fire of the fuse is considerable. A great improvement, however, has lately been made in the manner of putting in the gold pans; they are now dove-tailed in before the lock-plate is hardened, by which means they seldom or never blow out; and it is now found that they will stand better than any other species of pan, provided the lock is eased from the touch-hole, or taken off when the barrel is taken out of the stock. Still we are of opinion that the steel pan will be found, with common care in cleaning it, to last as long, and to answer every purpose as well, as when lined with gold.

*Of the choice of gunpowder.*—The excellence of this article as to its properties, and the relative condition in which it is at the time of using it, with respect to dryness, dampness, or age, are in themselves circumstances so obviously

important to the sportsman, that we have often been astonished at the almost total neglect which attends this part of the shooting science: but he may henceforward be assured, that, without the utmost circumspection and care herein, his high-priced fowling-piece will but little avail him; mortification and disgust will generally ensue, and the gunsmith too frequently be blamed for the fault which the sportsman alone has created by his own neglect. Gunpowder is composed of very light charcoal, sulphur, and well refined saltpetre. The powder used by sportsmen in shooting game is generally composed of six parts of saltpetre, one of charcoal, and one of sulphur; but these proportions, as well as the introduction of other ingredients, and the sizes of the grains, are undoubtedly varied by the different manufacturers in the composition of the powders of the same denomination, and are always kept profoundly secret. Powder, however well dried and fabricated it may have been, loses its strength when allowed to become damp. If daily observations on powder put into damp magazines, and carefully preserved in barrels, are not sufficient to establish this fact, the following experiment will render it incontestable:—Let a quantity of well-dried powder be nicely weighed, and put into a close room, where the air is temperate, and seemingly dry, and be left for three or four hours; on weighing it again, its weight will be increased. This same powder, exposed to an air loaded with vapor, acquires much additional weight in a short time. Now the increase of the weight being proportional to the quantity of vapor contained in the atmosphere, and to the length of time that the powder is exposed to it; it follows, that powder easily attracts moisture. Wherefore, if a degree of heat sufficient only to fire dry powder be applied to powder that is damp, the moisture will oppose the action of the fire, and the grains either will not take fire at all, or their inflammation will be slower; thus, as the fire will spread more slowly, fewer grains will burn; and the penetration of the fire from the surface to the centre of each grain, and consequently their consumption, will require more time. Whence it may be concluded that all degrees of moisture diminish the force of powder. Saltpetre, not sufficiently refined, attracts moisture very readily; and as the substances that render it impure lessen the quantity of fluid, and prevent its detonation, it should be refined as much as possible before it is employed in the fabrication of gunpowder. The force of powder is owing to an elastic fluid generated at the explosion, the suddenness of which depends upon the proportion of the ingredients, the contact between the nitrous and combustible particles, and the size of the grains, &c. Hence it may be concluded that when several powders, equally well dried, and fired under the same state of the atmosphere, are compared together, that which produces the greatest quantity of the elastic fluid, in a given space of time, is the strongest. There are two general methods of examining gunpowder; one with regard to the purity of its composition, the other with regard to its strength. Its purity is known by laying two or three little heaps near each other upon

white paper, and firing one of them. For if this takes fire readily, and the smoke rises upright, without leaving any dross or feculant matter behind, and without burning the paper, or firing the other heaps, it is esteemed a sign that the sulphur and nitre were well purified, that the coal was good, and that the three ingredients were thoroughly incorporated together, but, if the other heaps also take fire at the same time, it is presumed that either common salt was mixed with the nitre, or that the coal was not well ground, or the whole mass not well beat and mixed together; and, if either the nitre or sulphur be not well purified, the paper will be black or spotted. For proving the strength of gunpowder, a number of machines have been invented, all of which are liable to many objections, and, upon trial with the same powder, are found to give results so different that no dependence can be placed in them; to so many modifications are the principal properties of powder subject, even in experiments conducted with the utmost care. These variations have been attributed, by many, to the different density of the atmosphere at the time of the different experiments; but the opinions upon this matter are so improbable in themselves, and so contradictory to each other, that they claim neither attention nor belief. Thus, some will have it that gunpowder produces the greatest effect in the morning and evening, when the air is cool and dense; whilst others assert that its force is greatest in sunshine, and during the heat of the day. Mr. Robins concludes from the result of several hundred trials, made by him at all times of the day, and in every season of the year, that the density of the atmosphere has no effect in this matter, and that we ought to attribute the variations observed at these times to some other cause than the state of the air: probably they are owing to the imperfection of the instrument, or to the manner in which the trial was conducted. In this state of uncertainty, then, upon the theory of the effects of gunpowder, we remain at this day.

If experiments, however, are made with the prover, great care must be taken not to press the powder in the smallest degree into the tube, but to pour it gently in; and particularly in trying the strength of different powders, which is the best use to which the instrument, imperfect as it is, can be applied, attention must be paid that one powder is not pressed closer than another at each experiment, nor the successive experiments made until the prover is cool, otherwise no comparative certainty can be gained. By far the most certain method, however, of determining the quality of powder, is by drying some of it very well, and then trying how many sheets of paper it will drive the shot through, at the distance of ten or twelve yards. In this trial we should be careful to employ the same sized shot in each experiment, the quantity both of the shot and the powder being regulated by exact weight; otherwise we cannot, even in this experiment, arrive to any certainty in comparing the strength of different powders, or of the same powder at different times. Powder ought to be kept very dry; every degree of moisture injures it. Good powder, however, does not readily imbibe mois-

ture; and, perhaps, there is no greater proof of the bad quality of powder than its growing damp quickly when exposed to the air: this readiness to become moist depends upon the saltpetre employed in the composition not having been freed from the common salt it contains in its crude state, and which, in consequence, has a strong attraction for watery particles. Powder may acquire a small degree of dampness, and be freed from it again by drying, without much injury to its quality. But, if the moisture be considerable, the saltpetre is dissolved, and the intimate mixture of the ingredients thereby entirely destroyed. Drying powder with too great a heat also injures it; for there is a degree of heat, which, although not sufficient to fire the powder, will yet dissipate the sulphur, and impair the composition by destroying the texture of the grains. The heat of the sun is, perhaps, the greatest it can with safety be exposed to, and, if properly managed, is sufficient for the purpose: when this cannot be had, the heat of a fire, regulated to the same degree, may be employed; and for this end a heated pewter plate is perhaps as good as any thing, because pewter retains so moderate a heat that there can be little danger of spoiling the powder by producing the consequences before-mentioned.

It is observable that damp powder produces a remarkable foulness in the fowling-piece after firing, much beyond what arises from an equal quantity of dry powder; and this seems to arise from the diminution of the activity of the fire in the explosion. Unless the sportsman is very particular indeed in the mode of keeping his powder, we would recommend him always to air it and his flask, before he takes ~~the~~ field. Flasks made of copper or tin are much better for keeping powder in than those made of leather, or than small casks: the necks of these should be small, and well stopped with cork. After this dissertation on gunpowder, it will naturally be expected that we point out to the sportsman the best powder for shooting; for this purpose we shall recommend the Dartford powder of Messrs. Pigou and Andrews, for being not only stronger, but the cleanest in burning and the quickest in firing, of any other at this time manufactured in the kingdom; and we also venture to give it as our opinion that the manufacturers of this powder seem to have attained, as nearly as any purpose can require, that accuracy of granulation, and of the proportions and qualities of all the ingredients, which most readily produces the destruction of all the composition, and yields the greatest possible quantity of the permanent elastic fluid in a given time; which properties alone can constitute powder of the best quality.

*Of shot.*—The choice of this article is highly worthy of the sportsman's care. It should be equal, round, and void of cavities. The patent milled shot is, at this time, to be preferred to all other sorts, and is in such general use that the instructions which here follow on the size of the shot to be adopted in the different chases must be understood to relate to the patent shot only.

It is extremely important for the success of the chase that the sportsman should proportion the size of his shot, as well to the particular spe-

cies of game he means to pursue as to the season of killing it. Thus, in the first month of partridge shooting, shot No. 1 should be used; for since, at this time, the birds spring near at hand, and we seldom fire at more than the distance of forty paces, if the shooter takes his aim tolerably well, it is almost impossible for a bird at this distance to escape in the circle, or disk, which the shot forms. Hares also, at this season of the year, sit closer; and, being at this time thinly covered with fur, may easily be killed with this sized shot at thirty or thirty-five paces. In snipe and quail shooting, this sized shot is peculiarly proper; for, in using a larger size, however true the sportsman may shoot, yet he will frequently miss; the objects being so small that they have great chance of escaping in the vacant spaces of the circle or disk.

About the beginning of October, at which time the partridges are stronger in the wing, No. 3 is the proper shot to be used. This size seems to be the best of any; it preserves a proper medium between shot too large and that which is too small, and will kill a hare from the distance of thirty-five to forty paces, and a partridge at fifty, provided the powder be good. It will serve also for rabbit shooting. In short, it is excellent for all seasons, and many sportsmen use no other the season round. It is true that distant objects are frequently missed for the want of larger shot; but then these bear no proportion to the number which are daily missed by using shot of too large a size, especially with the feathered game. If a man were to shoot constantly with shot No. 5, for one partridge, which he might chance to kill with a single pellet, at the distance of eighty paces, he would miss twenty birds at fifty paces which would in such case escape in the vacant spaces of the circle. But if the sportsman expressly proposes to shoot wild ducks, or hares, then, indeed, he had better use the No. 5. However, in shooting with a double barrelled gun, it may be prudent to load one of the barrels with large shot, for the necessary occasions; and, in any case where large shot is required, No. 5, will be found to be better than any other; for its size is not so large as to prevent it from sufficiently garnishing, or being equally spread in the circle, and it can at the same time perform, in effect, all that a larger sized shot can do, which garnishes but very little, if any at all.

In order, therefore, to show clearly, at one view, the comparative difference in the garnishing of shot of different sizes, we here subjoin a table, which indicates the number of pellets precisely composing an ounce weight of each sort of shot.

Patent Shot.		Common Shot.	
No. B. B.	1 oz.	60	
B.	id.	67	
1.	id.	86	
2.	id.	109	
3.	id.	160	
4.	id.	200	
5.	id.	256	
6.	id.	444	
7.	id.	530	
8.	id.	600	
No. 7.	1 oz.	350	
	6.	id.	260
	5.	id.	235
	4.	id.	190
	3.	id.	140
	2.	id.	110
	1.	id.	95

*The Proportions of Powder and Shot in the Charge.*—To find the charge that gives the longest range, in fowling pieces of different dimensions, must be allowed to be a discovery of infinite importance to every sportsman; and, as it seems to be an opinion pretty generally received and established, that every barrel has a particular load (not a measure estimated by any rules to be drawn from a comparison made between the proportions of the calibre and the length of the barrel) with which it will shoot with greater certainty and effect: it cannot be doubted that he will make some experiments with his own barrels, in order to attain this end. Before we proceed, therefore, to lay down rules for the loading of fowling pieces of different dimensions, we beg leave to engrave an excellent principle in the practice of the artillery, on this point, upon the shooting science. It is asserted that by using small charges at first, and increasing the quantity of powder by degrees, the ranges will increase to a certain point; after which, if the charge be augmented, they will progressively diminish; though the recoil will still continue in the ratio of the increase of the charge. This is a consequence that may be deduced from a variety of experiments, and is perfectly agreeable to the principles of mechanics; since the recoil and the range ought to be in the reciprocal ratio of the gun and the shot, making allowance for the resistance which these bodies meet with.

For a fowling piece of a common calibre, which is from twenty-four to thirty balls to the pound weight; a drachm and a quarter, or at most, a drachm and a half, of good powder; and an ounce, or an ounce and a quarter, of shot, is sufficient. But when shot of a larger size is used, such as No. 5, the charge of shot may be increased one-fourth, for the purpose of counterbalancing, in some degree, what the size of the shot loses in the number of pellets, and also to enable it to garnish the more. For this purpose the sportsman will find a measure marked with the proper gauges very convenient to him. An instrument of this nature may now be purchased at most of our locksmiths.

Different opinions, however, are entertained on the proportions of the charge. Some determine the charge of a fowling piece by the weight of a ball of the exact size of the calibre; estimating the weight of the powder at one-third of that of the ball, whether it is proposed to shoot with ball or with shot; and the weight of the shot they estimate at a moiety more, or, at the most, at double the weight of the ball. This calculation comes pretty near to the propositions we have just laid down, except in the difference of size between the calibres twenty-four and thirty, which, notwithstanding, is not sufficiently great in the two cases to require a gradation in the weight of the charge. Others again lay down as a rule for the charge of powder, a measure of the same diameter as the barrel: and double that diameter in depth: and, for the shot, a measure of the like diameter, but one-third less in depth than that for the powder; this also agrees tolerably well with the proportions we have mentioned, at least for the powder, but the

measure of shot seems to be too small. In shooting with a rifle-piece, some persons proportion the quantity of powder to three times the quantity which the mould of the ball adapted to the piece will contain.

Although proverbs are generally true, or at least possess some portion of truth, yet nothing is so glaringly absurd, or less founded in rational principles, than that old adage, ‘Sparing of powder, and liberal of shot:’ a saying which is not only in the acquaintance, but in the constant practice of most sportsmen. As a consequence of overloading with shot, the powder has not sufficient strength to throw it to its proper distance; for, if the object be distant, one-half of the pellets composing the charge, by their too great quantity and weight, will strike against each other, and fall by the way; and those which reach the mark will have small force, and will produce but little or no effect. Thus to overload is the strange fancy of poachers, who imagine they cannot kill unless they put two ounces, or more, of large shot into their pieces. It is true, that they destroy a great quantity of game, but then it is not fairly shot. Such men are in some measure punished by the severe strokes they receive on the shoulders and cheeks, in consequence of the excessive recoil.

**SHOOTER'S-HILL**, on the road to Dartford, in Kent, eight miles and a half from London, is supposed to have derived its name from the exercise of archery, in the neighbouring woods, in former times. On the summit of this hill are some pleasant houses, particularly the Bull Inn, which commands a most extensive prospect of Kent and the adjoining counties. This neighbourhood was formerly noted for robberies, till the road was widened, and much of the coppice-wood cut down. Within the last few years the road on the summit has been lowered many feet, leaving the Bull Inn thirty feet above the level. On the right of the road stands a triangular tower, 482 feet above the level of the sea, which was erected by the lady of Sir E. W. James, in commemoration of his conduct in the East Indies at the taking of Severndroog, from which it is named; near it stands the Admiralty telegraph.

**SHOP**, *n.s.* } Sax. *feoep*, a magazine; Fr. *eschoppe*; low Lat. *shopa*.  
**SHOP'BOARD**, } Ainsworth. A place where  
**SHOP'BOOK**, } any thing is sold, and hence  
**SHOP'KEEPER**, } where certain things are manufactured: the derivatives corresponding.

Our windows are broke down,  
And we for fear compelled to shut our *shops*. *Shakespeare*.

In his needy *shop* a tortoise hung,  
An alligator stuft, and other skins  
Of ill-shaped fishes; and about his shelves  
A beggarly account of empty boxes. *Id.*  
We have divers mechanical arts and stuffs made  
by them; and *shops* for such as are not brought into  
vulgar use. *Bacon*.

That beastly rabble, that came down  
From all the garrets in the town,  
And stalls, and *shopboards*, in vast swarms,  
With new-chalked bills, and rusty arms. *Hudibras*.  
Scarce any sold in *shops* could be relied on as  
faithfully prepared. *Boyle*.

Garth, generous as his muse, prescribes and gives;  
The *shopman* sells, and by destruction lives. *Dryden*.

They that have wholly neglected the exercise of their understandings, will be as unft for it, as one unpractised in figures to cast up a *shopbook*. *Locke*.

It dwells not in *shops* or workhouses; nor till the late age was it ever known that any one served seven years to a smith or a taylor, that he should commence doctor or divine from the *shopboard* or the anvil; or from whistling to a team come to preach to a congregation. *South's Sermons*.

Nothing is more common than to hear a *shopkeeper* desiring his neighbour to have the goodness to tell him what is a clock. *Addison*.

What a strange thing is it, that a little health, & the poor business of a *shop*, should keep us so senseless of these great things that are coming so fast upon us! *Law*.

**SHOP-LIFTERS** (from shop and lifter), those that steal goods privately out of shops; which, being to the value of 5*s*, though no person be in the shop, is felony without the benefit of clergy, by the 10 and 11 W. III. c. 23.

**SHORE**, *n.s. & v.a.* } Sax. *peope*; Goth.

**SHORE'LESS**, *adj.* } *skier*. The coast of the sea: hence both a drain, and a prop or support: to support; hold up; and, in an obsolete sense, to set on shore: the adjective corresponding.

Beside the fruitful *shore* of muddy Nile,  
Upon a sunny bank outstretched lay,  
In monstrous length, a mighty crocodile. *Spenser*.

They undermined the wall, and, as they wrought,  
*shored* it up with timber. *Knottles*.

I will bring these two blind ones aboard him; if he think it fit to *shore* them again, let him call me rogue. *Shakespeare*.

There was also made a *shoring* or under-propping act for the benevolence; to make the sunis which any person had agreed to pay leivable by course of law. *Bacon's Henry VII*.

He did not much strengthen his own subsistence in court, but stood there on his own feet, for the most of his allies rather leaned upon him than *shored* him up. *Wotton*.

Sea covered sea; *Milton*.  
Sea without *shore*.

This ocean of felicity is so *shoreless* and bottomless that all the saints and angels cannot exhaust it. *Boyle*.

There is commonly a declivity from the *shore* to the middle part of the channel, and those *shory* parts are generally but some fathoms deep. *Burnet's Theory of the Earth*.

When I use the word *shore*, I may intend thereby a coast of land near the sea, or a drain to carry off water, or a prop to support a building. *Watts's Logick*.

**SHORE** is otherwise defined a place washed by the sea, or by some large river. Count Marsigli divides the sea shore into three portions; the first of which is that tract of land which the sea just reaches in storms and high tides, but which it never covers; the second is that which is covered in high tides and storms, but is dry at other times; and the third is the descent from this, which is always covered with water. The first part is only a continuation of the continent, and suffers no alteration from the neighbourhood of the sea, except that it is rendered fit for the growth of some plants, and wholly unfit for that

of others, by the saline streams and impregnations; and it is scarcely to be conceived by any but those who have observed it, how far on land the effects of the sea reach, so as to make the earth proper for plants which will not grow without this influence, there being several plants frequently found on high hills and dry places at three, four, and more miles from the sea, which yet would not grow unless in the neighbourhood of it, nor will ever be found elsewhere. The second portion of the shore is much more affected by the sea than the former, being frequently washed and beaten by it. Its productions are rendered salt by the water, and it is covered with sand, or with the fragments of shells in form of sand, and in some places with a tartarous matter deposited from the water; the color of this whole extent of ground is usually dusky and dull, especially where there are rocks and stones, and these covered with a slimy matter. The third part of the shore is more affected by the sea than either of the others; and is covered with a uniform crust of the true nature of the bottom of the sea, except that plants and animals have their residence in it, and the decayed parts of these alter it a little.

**SHORE** (Jane), the celebrated concubine of king Edward IV., was the wife of Matthew Shore, a goldsmith in Lombard-street, London. Kings are seldom unsuccessful in their amorous pursuits; therefore there was nothing wonderful in Mrs. Shore's removing from Lombard-street to shine at court as the royal favorite. Historians represent her as extremely beautiful, remarkably cheerful, and of most uncommon generosity. The king, it is said, was no less captivated with her temper than with her person; she never made use of her influence over him to the prejudice of any person; and, if ever she importuned him, it was in favor of the unfortunate. After the death of Edward, she attached herself to lord Hastings: and, when Richard III. cut off that nobleman as an obstacle to his ambitious schemes, Jane Shore was arrested as an accomplice, on the ridiculous accusation of witchcraft. This, however, terminated only in a public penance; excepting that Richard rifled her of her little property: but, whatever severity might have been exercised towards her, it appears that she was alive, though sufficiently wretched, in the reign of Henry VIII. when Sir Thomas More saw her poor, old, and shrivelled, without the least trace of her former beauty. Mr. Rowe, in his tragedy of Jane Shore, has adopted the popular story related in the old historical ballad, of her perishing by hunger in a ditch where Shoreditch now stands. But Stow assures us that street was so named before her time.

**SHOREHAM**, a parish in Codsheath hundred and lathe of Sutton-at-Hone, Kent, four miles north from Seven Oaks, and twenty from London, near the river Darent. Here is an antique house still called Shoreham Castle. It has a charity-school, and a fair on the 1st of May. It is a rectory, value £34 9s. 9d., united with Oxford. Patrons, the dean and chapter of West-minster.

**SHOREHAM, NEW**, a sea-port, borough, and market-town, in Fishergate hundred, rape of

Bramber, Sussex, six miles west from Brighton, and fifty-six south by west from London, on the river Adar. The town lies about a mile within the haven, is singularly built, in the centre of which is the market-house, standing on Doric pillars. It has a considerable traffic, and has a custom-house with a collector, comptroller, and inferior officers. Along the neighbouring coast, during peace, much smuggling is carried on. The church is an extensive building, and was formerly collegiate; of late it has been repaired and greatly beautified. Although it is only a tide haven, yet, as it is the best upon the coast, vessels of considerable burden come into it, it having eighteen feet water at spring tides, but does not rise higher than twelve in common, and has only three feet at the ebb. High-water, full and change, a quarter before ten o'clock. Seven leagues west from Beachy Head. Beyond the town, across the river, is a timber bridge, leading to Arundel and Chichester. The town is a borough by prescription, and has sent members to parliament ever since 1298. It was disfranchised for corruption in 1771; but soon after restored, which circumstance produced an extension of the elective franchise to all the freeholders of 40s. within the rape of Bramber, being in number about 1300. Shoreham has a considerable trade in ship-building, and is noted for the excellency of its oysters. Ella is supposed to have landed here with his three sons, in the year 477, when he defeated the Britons, and founded the kingdom of the South Saxons. Market on Saturday. Fair, July 25th. It is a vicarage, value 6*l* 18*s.*, in the patronage of Magdalen College, Oxford. The church is in lat. 50° 49' 59" N., long. 0° 16' 19" W.

**SHORLING AND MORLING**, are words to distinguish fells of sheep; shorling being the fells after the fleeces are shorn off the sheep's back; and morling the fells fled off after they die or are killed. In some parts of England they understand by a shorling, a sheep whose face is shorn off; and by a morling a sheep that dies.

**SHORN**. The participle passive of **Shear**: which see: with *of*.

So rose the Danite strong,

*Shorn of his strength.*

*Milton.*

Vile shrubs are shorn for browze: the towering height

Of unctuous trees are torches for the night.

*Dryden.*

He plunging downward shot his radiant head;  
Dispelled the breathing air that broke his flight;  
*Shorn of his beams*, a man to mortal sight.

*Id.*

<b>SHORT</b> , <i>n. s., adj., &amp; adv.</i> ?	<i>Saxon recente</i>
<b>SHORTEN</b> , <i>v. a.</i>	Goth. and Swed.
<b>SHORTHAND</b> , <i>n. s.</i>	<i>skort</i> ; qu. Latin
<b>SHORTLIN'ED</b> , <i>adj.</i>	<i>curtus?</i> Scanty;
<b>SHORTLY</b> , <i>adv.</i>	inadequate; defective;
<b>SHORTNESS</b> , <i>n. s.</i>	contracted; not long in
<b>SHORT'RIBS</b> ,	space, extent,
<b>SHORTSIGHT'ED</b> , <i>adj.</i>	time, or duration;
<b>SHORTSIGHT'EDNESS</b> , <i>n. s.</i>	brittle; friable: a brief account: as
<b>SHORIWAIST'ED</b> , <i>adj.</i>	an adverb, used
<b>SHORTWIND'ED</b> ,	
<b>SHORTWING'ED</b> .	

in composition for not long: to shorten is to

make short in any way; contract; confine; restrain: shorthand, a compendious or short method of writing: the other compounds and derivatives seem obvious in their meaning.

They changed their night into day: the light is short, because of darkness. *Job xvii. 12.*

Some cottons here grow, but short in worth unto those of Smyrna. *Sandys.*

The Turks give you a quantity rather exceeding han short of your expectations. *Id.*

Her breath, then short, seemed loth from home to pass,  
Which more it moved the more it sweeter was. *Sidney.*

Immoderate praises the foolish lover thinks short of his mistress, though they reach far beyond the heavens. *Id.*

The Irish dwell together by their septs, so as they may conspire what they will; whereas, if there were English placed among them, they should not be able to stir but that it should be known, and they shorten according to their demerits. *Spenser.*

Because they see it is not fit or possible that churches should frame thanksgivings answerable to each petition, they shorten somewhat the reins of their censure. *Hooker.*

The necessity of shortness causeth men to cut off impertinent discourses, and to comprise much matter in few words. *Id.*

Would you have been so brief with him, he would Have been so brief with you to shorten you,  
For taking so the head, the whole head's length. *Shakspeare.*

The short and long is, our play is preferred. *Id.*  
To be known, shortens my laid intent;  
My boon I make it, that you know me not. *Id.*  
I must leave thee, love, and shortly too. *Id.*  
Thou art no friend to God, or to the king;  
Open the gates, or I'll shut thee out shortly. *Id. Henry VI.*

Sir, pardon me in what I have to say,  
Your p'ainness and your shortness please me well. *Shakspeare.*

And breathe shortwinded accents of new broils  
To be commenced in strands afar. *Id. Henry IV.*  
It is better to sound a person afar off than to fall upon the point at first; except you mean to surprise him by some short question. *Bacon.*

They move strongest in a right line, which is caused by the shortness of the distance. *Id. Natural History.*

Whatsoever is above these proceedeth of shortness of memory, or of want of a stayed attention. *Bacon.*

The English were inferior in number, and grew short in their provisions. *Hawward.*

We shortened days to moments by love's art,  
Whilst our two souls  
Perceived no passing time, as if a part  
Our love had been of still eternity. *Suckling.*

Repentance is, in short, nothing but a turning from sin to God; the casting off all our former evils, and, instead thereof, constantly practising all those christian duties which God requireth of us. *Duty of Man.*

With this the Mede shortwinded old men eases,  
And cures the lung's unsavory diseases. *May's Virgil.*

The foolish and shortsighted die with fear  
That they go nowhere, or they know not where. *Denham.*

In shorthand skilled, where little marks comprise Whole words, a sentence in a letter lies. *Creech.*  
The armies came shortly in view of each other. *Clarendon.*

He commanded those, who were appointed to attend him, to be ready by a short day. *Id.*

This less volatile earth,  
By shorter flight to the east, had left them there. *Milton.*

Nor love thy life, nor hate, but what thou livest  
Live well; how long or short permit to heaven. *Id.*

I know them not; nor therefore am I short  
Of knowing what I ought. *Id. Paradise Regained.*  
To attain

The height and depth of thy eternal ways,  
All human thoughts come short, supreme of things. *Milton.*

His flesh is not firm, but short and tasteless. *Walton.*

To place her in Olympus' top a guest,  
Among the immortals, who with nectar feast;  
That poor would seem that entertainment short  
Of the true splendour of her present court. *Walter.*

We err, and come short of science, because we are so frequently misled by the evil conduct of our imaginations. *Glanville.*

Another account of the shortness of our reason, and easiness of deception, is the forwardness of our understanding's assent to slightly examined conclusions. *Id. Scopis.*

It may be easily conceived, by any that can allow for the lameness and shortness of translations out of languages and manners of writing differing from ours. *Temple.*

Short were her marriage joys: for in the prime Of youth her lord expired before his time. *Dryden.*

He wills not death should terminate their strife,  
And wounds, if wounds ensue, be short of life. *Id.*

He seized the helm; his fellows cheered,  
Turned short upon the shelves, and manly steered. *Id.*

As one condemned to leap a precipice,  
Who sees before his eyes the depth below,  
Stops short. *Id.*

None shall dare  
With shortened sword to stab in closer war,  
But in fair combat. *Id.*

War, and luxury's more direful rage,  
Thy crimes have brought, to shorten mortal breath,  
With all the numerous family of death. *Id.*

If he meet with no reply, you may conclude that I trust to the goodness of my cause: the short on't is, 'tis indifferent to your humble servant whatever your party says. *Id.*

From Medway's pleasing stream  
To Severn's roar be thine:  
In short, restore my love, and share my kingdom. *Id.*

Beauty and youth,  
And sprightly hope, and short-enduring joy. *Id.*

Dishonest with lop'd arms the youth appears,  
Spoiled of his nose, and shortened of his ears. *Id.*

Your follies and debauches change  
With such a whirl, the poets of your age  
Are tired, and cannot score them on the stage;  
Unless each vice in shorthand they indite,  
Even as nocht 'prentices whole sermons write. *Id.*

Unhappy parent of a shortlived son!  
Why loads he this embittered life with shame? *Id.*  
He celebrates the anniversary of his father's funeral,  
And shortly after arrives at Cumæ. *Id.*

Shortwinged, unfit himself to fly, *Id.*  
His fear foretold foul weather.

Ducklegged, shortwaisted, such a dwarf she is,  
That she must rise on tip-toes for a kiss. *Id. Juniper.*

So soon as ever they were gotten out of the hearing  
of the cock, the lion turned short upon him and tor  
him to pieces. *L'Estrange.*

In short, she makes a man of him at sixteen, and a boy all his life after. *Id.*

Other propositions were designed for snares to the shortsighted and credulous. *Id.*

If speculative maxims have not an actual universal assent from all mankind, practical principles come short of an universal reception. *Locke.*

Boys have but little use of shorthand, and should by no means practise it till they can write perfectly well. *Id.*

Where reason came short, revelation discovered on which side the truth lay. *Id.*

To shorten its way to knowledge, and make each perception more comprehensive, it binds them into bundles. *Id.*

Marl from Derbyshire was very fat, though it had so great quantity of sand that it was so short, that, when wet, you could not work it into a ball, or make it hold together. *Mortimer.*

My breath grew short, my beating heart sprung upward, And leaped and bounded in my heaving bosom. *Smith.*

The short is, to speak all in a word, the possibility of being found in a salvable state cannot be sufficiently secured, without a possibility of always persevering in it. *Norris.*

As in many things the knowledge of philosophers was short of the truth, so almost in all things their practice fell short of their knowledge: the principles by which they walked were as much below those by which they judged as their feet were below their head. *South's Sermons.*

They, since their own short understandings reach No farther than the present, think even the wise, Like them, disclose the secrets of their breasts. *Rowe.*

The people fall short of those who border upon them in strength of understanding. *Addison.*

The frequent alterations in publick proceedings, the variety of shortlived favourites that prevailed in their several turns under the government of her successors, have broken us into these unhappy distinctions. *Id. Freeholder.*

Cunning is a kind of shortsightedness, that discovers the minutest objects which are near at hand, but is not able to discern things at a distance. *Spectator.*

May they not justly to our climes upbraid

*Shortness of night, and penury of shade?* *Prior.*

As the language of the face is universal, so 'tis very comprehensive: no acumen can reach it: 'tis the shorthand of the mind, and crowds a great deal in a little room. *Collier.*

When I made these, an artist undertook to imitate it; but, using another way of polishing them, he fell much short of what I had attained to, as I afterwards understood. *Newton.*

Shortsighted men see remote objects best in old age; therefore they are accounted to have the most lasting eyes. *Id.*

Some vices promise a great deal of pleasure in the commission; but then, at best, it is but shorthanded and transient, a sudden flash presently extinguished. *Calamy's Sermons.*

The time will shortly come wherein you shall more rejoice for that little you have expended for the benefit of others, than in that which by so long toil you shall have saved. *Calamy.*

It is not credible that the Phoenicians, who had established colonies in the Persian gulph, stopt short, without pushing their trade to the Indies. *Arbuthnot.*

Whatever shortens the fibres, by insinuating themselves into their parts, as water in a rope, contracts. *Id.*

One strange draught prescribed by Hippocrates, for a short-breathed man, is half a gallon of hydromel, with a little vinegar. *Id.*

A gentleman was wounded in a duel: the rapier entered into his right side, slanting by his shortribs under the muscles. *Wiseman's Surgery.*

The signification of words will be allowed to fall much short of the knowledge of things. *Baker.*

Weak though I am of limb, and short of sight,

Far from a lynx, and not a giant quite,

I'll do what Mead and Cheselden advise,

To keep these limbs, and to preserve these eyes. *Pope.*

Though short my stature, yet my name extends To heaven itself, and earth's remotest ends. *Id.*

Virgil exceeds Theocritus in regularity and brevity, and falls short of him in nothing but simplicity and propriety of style. *Id.*

Then palaces shall rise; the joyful son

Shall finish what his shortlived sire begun. *Id.*

Even he, whose soul now melts in mournful lays, Shall shortly want the generous tear he pays. *Id.*

To see whole bodies of men breaking a constitution; in short, to be encompassed with the greatest dangers from without, to be torn by many virulent factions within, then to be secure and senseless, are the most likely symptoms in a state of sickness unto death. *Swift.*

That great wit has fallen short in his account. *More.*

Think upon the vanity and shortness of human life, and let death and eternity be often in your minds. *Law.*

SHORT (James), A. M. and F. R. S., an eminent optician, born in Edinburgh on the 10th of June, O. S., 1710. At ten years of age, having lost his father and mother, and being left in a state of indigence, he was received into Heriot's Hospital, where he soon displayed his mechanical genius in constructing for himself little chests, book-cases, and other conveniences, with such tools as fell in his way. At the age of twelve he was removed from the hospital to the High School, where he showed a considerable taste for classical literature, and generally kept at the head of his class. In 1726 he was entered into the university, where he passed through the usual course of education, and took his master's degree with great applause. By his friends he was intended for the church; but, after attending a course of theological lectures, he thought that profession little suited to his talents; and devoted his whole time to mathematical and mechanical pursuits. Having the celebrated M'Laurin for his preceptor, he soon discovered the bent of his genius, made a proper estimate of the extent of his capacity, and encouraged him to prosecute those studies in which nature had qualified him to make the greatest figure. Under the eye of that eminent master, he began, in 1732, to construct Gregorian telescopes; and, as the professor observed in a letter to Dr. Jurin, 'by taking care of the figure of his specula, he was enabled to give them larger apertures, and to carry them to greater perfection, than had ever been done before him.' See OPTICS, Index. In 1736 Mr. Short was called to London, at the desire of Queen Caroline, to give instructions in mathematics to William duke of Cumberland: and, immediately on his appointment to that very honorable office, he was elected F. R. S. and

patronised by the earls of Morton and Macclesfield. In 1739 he accompanied the former to the Orkney Isles, where he was employed in adjusting the geography of that part of Scotland. Mr. Short having returned to London, and established himself there, was in 1743 employed by lord Thomas Spencer to make for him a reflector of twelve feet focus, for which he received 600 guineas. He made several other telescopes of the same focal distance with greater improvements and higher magnifiers; and in 1752 furnished one for the king of Spain, for which, with its whole apparatus, he received £1200. This was the noblest instrument of the kind that had then been constructed, and perhaps it has never yet been surpassed except by the astonishing reflectors of Herschel. See TELESCOPE. Mr. Short was wont to visit the place of his nativity once every two or three years during his residence in London, and in 1766 he visited it for the last time. On the 15th of June 1768 he died, after a short illness, at Newington Butts, near London, of a mortification in his bowels, having nearly completed his fifty-eighth year. He left a fortune of about £20,000, of which £15,000 was bequeathed to two nephews and the rest in legacies to his friends. In gratitude for the steady patronage of the earl of Morton, he left to his daughter, the Lady Mary Douglas, afterwards countess of Aboyne, £1000 and the reversion of his fortune, should his nephews die without issue; but this reversionary legacy the lady, at the desire of her father, generously relinquished by a deed in favor of Mr. Short's brother, Mr. Thomas Short, and his children. Mr. Short's eminence as an artist is universally known, and he is said to have been a man of amiable manners; but if, out of such a fortune, he left nothing to the hospital in which he received the rudiments of that education by which he acquired it, he was guilty of an omission highly criminal.

**SHORTFORD**, q. d. fore-close, an ancient custom in the city of Exeter, when the lord of the fee cannot be answered rent due to him out of his tenement, and no distress can be levied for the same. The lord is then to come to the tenement, and there take a stone, or some other dead thing off the tenement, and bring it before the mayor and bailiff, and thus he must do seven quarter days successively; and, if on the seventh quarter day the lord is not satisfied of his rent and arrears, then the tenement shall be adjudged to the lord to hold the same a year and a day; and forthwith proclamation is to be made in the court, that, if any man claims any title to the said tenement, he must appear within the year and day next following, and satisfy the lord of the said rent and arrears: but if no appearance be made, and the rent not paid, the lord comes again to the court, and prays that according to the custom the said tenement be adjudged to him in his demesne as of fee, which is done accordingly, so that the lord hath from thenceforth the said tenement, with the appurtenances to him and his heirs.

**SHORT-HAND WRITING.** See STENOGRAPHY.

**SHORT-JOINTED**, in the manege. A horse is said to be short-jointed that has a short pastern; when this joint or the pastern is too short, the

horse is subject to have his fore legs from the knee to the coronet all in a straight line. Commonly short-jointed horses do not manage so well as the long-jointed; but out of the manege the short-jointed are the best for travel or fatigue.

**SHORT-SIGHTEDNESS**, myopia, that defect in the conformation of the eye wherein the crystalline, &c., being too convex, the rays reflected from different objects are refracted too much, and made to converge too fast, so as to unite before they reach the retina, by which means vision is rendered dim and confused. See MYOPS. A learned author thinks it probable that, out of so great a number of short-sighted persons as are daily to be met with, few are born so; for it generally grows upon young people at the age of twenty or twenty-five, and therefore might possibly be prevented by using their eyes while young to all sorts of conformations, that is, by often looking through glasses of all sorts of figures, and by reading, writing, or working with spectacles of several degrees of convexity; for, whatever be the powers by which the eye conforms itself to distinct vision, they may possibly grow weak, or lose their extent one way or other, for want of variety of exercise. It seems an opinion without foundation to think that such an exercise of the eyes can any wise injure them, provided due care be taken to avoid looking at objects that are too bright.

Dr. Smith mentions a young gentleman who became short-sighted immediately after coming out of a cold bath, in which he did not totally immerse himself, and has ever since used a concave glass for many years. It is commonly thought that short-sightedness wears off in old age, on account of the eye becoming flatter: but the learned doctor questions whether this be matter of fact or hypothesis only.

It is remarkable that short-sighted persons commonly write a small hand, and love a small print, because they can see more of it at a view. That it is customary with them not to look at the person they converse with, because they cannot well see the motion of his eyes and features, and are therefore attentive to his words only. That they see more distinctly, and somewhat farther off, by a strong light than by a weak one; because a strong light causes a contraction of the pupil, and consequently of the pencils, both here and at the retina, which lessens their mixture, and consequently the apparent confusion; and, therefore, to see more distinctly, they almost close their eye-lids, for which reason they were anciently called myopes.—Smith's Optics, vol. ii. Rem. p. 10, &c.

Jurin observes that persons who are much and long accustomed to view objects at small distances, as students in general, watch-makers, gravers, painters in miniature, &c., see better at small distances, and not so well at great distances, as the rest of mankind. The reason is, that in the eye, as well as in other parts, the muscles, by constant exercise, are enabled to contract themselves with more strength, and by disuse are brought to less strength. Hence, in the persons before-mentioned, the greater muscular ring of the uvea contracts more easily and strongly, and the cornea more rea-

dily obeys the contraction of the ring, whence they see better at small distances. And the cornea, by being thus often and long bent into a greater convexity, does by degrees lose something of its elasticity, so as not to return to its natural elasticity, when the muscular ring ceases to act upon it. This is one cause of their not seeing so well at great distances: also the ligamentum ciliare, being seldom employed to lessen the convexity of the capsula, does by degrees become less capable of performing that office: and the capsula, being seldom drawn out and put into tension, must lose something of its distensile quality, so as less easily to comply with the action of the ligament. And this is another cause of their not seeing so well at great distances.—*Jurin, Essay on Dist. and Indist. Vision.* The general remedy for short-sightedness is a concave lens, held before the eye, which, making the rays diverge, or at least diminishing much of their convergency, makes amends for the too great convexity of the crystalline.

**SHOT, part. & n. s.** { The pret. and part.  
SHOTFREE, adj. } pass. of Suor, which

SHOTTEN, adj. { see. The act of shooting: the path or flight of a missile; the missile emitted; a gun charged; Fr. *escot*, an account: shotfree is clear of the reckoning: not to be hurt by shot: shotten is having shot or ejected the spawn.

She sat over against him, a good way off, as it were a bow shot. *Genesis xxi. 16.*

Their tongue is as an arrow shot out, it speaketh deceit. *Jeremiah.*

A shot unheard gave me a wound unseen. *Sidney.*

On the other side a pleasant grove  
Was shot up high, full of the stately tree  
That dedicated is to Olympick Jove. *Faerie Quene.*

I shall here abide the hourly shot  
Of angry eys. *Shakespeare. Cymbeline.*

Proud death!  
What feast is towered in thy infernal cell,  
That thou so many princes at a shot  
So bloodily hast struck? *Id. Hamlet.*

Though I could 'scape shotfree at London, I fear  
the shot here: here's no scorning but upon the pate. *Id. Henry IV.*

Go thy ways, old Jack; die when thou wilt, if  
good manhood be not forgot upon the earth, then am  
I a shotten herring. *Id.*

At this booty they were joyful, for that they were  
supplied thereby with good store of powder and shot. *Hayward.*

As the fund of our pleasure, let each pay his  
shot;  
Far hence be the sad, the lewd fop, and the sot. *Ben Jonson.*

The fortifier of Pendennis made his advantage of  
the commodiousness afforded by the ground, and shot  
rather at a safe preserving the harbour from sudden  
attempts of little fleets, than to withstand any great  
navy. *Carew.*

He caused twenty shot of his greatest cannon to be  
made at the king's army. *Clarendon.*

He only thought to crop the flower,  
New shot up from a vernal shower. *Milton.*

From before her vanished night,  
Shot through with orient beams. *Id. Paradise Lost.*

Impatient to revenge the fatal shot,  
His gut hand doubly to his left succeeds. *Dryden.*

Shepherd, leave decoying,  
Pipes are sweet a summer's day;  
But a little after toying,  
Women have the shot to pay. *Id.*

Ask for what price thy venal tongue was sold!

Tough withered truffles, rosy wine, a dish

Of shotten herrings, or stale stinking fish. *Id.*

Sometimes they shot out in length, like rivers; and  
sometimes they flew into remote countries in colonies. *Burnet.*

The same metal is naturally shot into quite different  
figures, as quite different kinds of them are of the  
same figure. *Woolward.*

He, prone on ocean in a moment flung,  
Stretched wide his eager arms, and shot the seas  
along. *Pope.*

He touched the pence when others touched the  
pot; *Swift.*

The hand that signed the mortgage paid the shot. *Swift.*

**SHOT** (Fr. boulet, et en général toutes sortes de charges pour les canons), a name given to all sorts of balls used for artillery and fire-arms, from the pistol to the cannon: those for cannon and carriages being of iron, and those for small-arms of lead.

Cannon shot is distinguished by the nature of the ordnance for which it is intended; as forty-two, thirty-two, twenty-four, eighteen, twelve, nine-pounders, &c., and those for small-arms by the names of the pieces; as musket, carbine, pistol, &c.

SHOT, PATENT MILLED, is thus made: sheets of lead, whose thickness corresponds with the size of the shot required, are cut into small pieces, or cubes, of the form of a die. A great quantity of these little cubes are put into a large hollow iron cylinder, which is mounted horizontally and turned by a winch; when by their friction against one another, and against the sides of the cylinder, they are rendered perfectly round, and very smooth. The other patent shot is cast in moulds, in the same way as bullets are.

SHOT, SMALL, or that used for fowling, should be well sized, and of a moderate bigness; for should it be too great, then it flies thin, and scatters too much; or if too small, then it hath not weight and strength to penetrate far, and the bird is apt to fly away with it. In order, therefore, to have it suitable to the occasion, it not being always to be had in every place fit for the purpose, we shall set down the true method of making all sorts and sizes under the name of mould shot. Its principal good properties are to be round and solid. Take any quantity of lead you think fit, and melt it down in an iron vessel; and as it melts keep it stirring with an iron ladle, skimming off all impurities whatsoever that may arise at the top; when it begins to look of a greenish color, strew on it as much auripigmentum or yellow orpiment, finely powdered, as will lie on a shilling, to every twelve or fourteen pounds of lead; then, stirring them together, the orpiment will flame. The ladle should have a notch on one side of the brim, for more easily pouring out the lead; the ladle must remain in the melted lead, that its heat may be the same with that of the lead, to prevent inconveniences which otherwise might happen by its being either too hot or too cold: then, to try your lead, drop a little of it into water,

and, if the drops prove round, then the lead is of a proper heat; if otherwise, and the shot have tails, then add more orpiment to increase the heat, till it be found sufficient. Then take a plate of copper, about the bigness of a trencher, which must be made with a hollowness in the middle, about three inches compass, within which must be bored about forty holes according to the size of the shot which you intend to cast; the hollow bottom should be thin; but the thicker the brim, the better it will retain the heat. Place this plate on a frame of iron, over a tub or vessel of water, about four inches from the water, and spread burning coals on the plate, to keep the lead melted upon it: then take some lead and pour it gently on the coals on the plate, and it will make its way through the holes into the water, and form itself into shot; do thus till all your lead be run through the holes of the plate, taking care, by keeping your coals alive, that the lead do not cool, and so stop up the holes. While your are casting in this manner, another person with another ladle may catch some of the shot, placing the ladle four or five inches underneath the plate in the water, by which means you will see if they are defective, and rectify them. Keep the lead in a just degree of heat, that it be not so cold as to stop up the holes in your plate, nor so hot as to cause the shot to crack; to remedy the heat, you must refrain working till it is of a proper coolness; and, to remedy the coolness of your lead and plate, you must blow your fire; observing that the cooler your lead is, the larger will be your shot; as the hotter it is, the smaller they will be. After casting, take them out of the water, and dry them over the fire with a gentle heat, stirring them continually that they do not melt; when dry, separate the great shot from the small, by the help of a sieve made for that purpose, according to their several sizes. But those who would have very large shot, make the lead trickle with a stick out of the ladle into the water, without the plate. If it stop on the plate, and yet the plate be not too cool, give but the plate a little knock, and it will run again; care must be had that none of your implements be greasy, oily, or the like; and when the shot, being separated, are found too large or too small for your purpose, or otherwise imperfect, they will serve again at the next operation. The sizes of common shot for fowling are from No. 1 to 6, and smaller, which is called mustard seed, or dust shot; but No. 5 is small enough for any shooting whatsoever. The No. 1 may be used for wild geese; the No. 2 for ducks, widgeons, and other water-fowl: the No. 3 for pheasants, partridges after the first month, and all the fen-fowl; the No. 4 for partridges, woodcocks, &c.; and the No. 5 for snipes and all the smaller birds.

Shot thus made is not without considerable imperfections. The exterior coat of the lower part of the drop becoming suddenly fixed by the contact of the water, its superior portion, which

is still liquid, as it also cools and contracts, necessarily pits, like the surface of metal in the channel of a mould, so that the greater part of the shot are somewhat hollow, and of an irregular form; consequently too light for the purpose to which they are destined, and liable to unequal resistance in their passage through the air. These defects are remedied in the *putout-shot*, the manufacture of which differs only from that of the preceding kind in the addition of a larger portion of arsenic, which varies according to the quality of the lead; in dropping it from such a height that it becomes solid before it enters the water, which is from forty to 100 feet; and, in some subsequent operations, which are as follows:—it is first dried and sifted. It is then boarded, which consists in scattering it on several polished slabs or trays of hard wood, with rims, in the form of a II, except that the sides converge towards the lower part, to which a slight inclination and alternate motion in their own planes are given by boys employed in the manufacture. The shot, whose form is imperfect, are detected by the sluggishness of their motion, and remain behind, whilst the others roll off from the board. The last operation is the polishing; which is performed by agitating it with the addition of a very small quantity of black lead, not exceeding two spoonfuls to a ton, in an iron vessel, turning on an horizontal axis like a butter churn. It does not appear that any higher degree of perfection than that which is thus attained remains to be desired. The argentine brilliancy of the shot when newly made, the beautiful accuracy of its form, and the curious instance of inanimate tactics which it presents when scattered on a plate, render it even an agreeable object of contemplation.

The shot now used in the royal navy is principally confined to three sorts, namely, round, grape, and case or canister.

Round-shot (Fr. boulet rond) is the most simple, and composed of a ball or globe of cast-iron, whose weight is in proportion to the size of the cannon, or to the diameter of its bore.

Grape-shot (Fr. charge à la suédoise, ou charge en grappe) is a combination of balls, fig. 6, plate V., put into a canvas bag, and corded strongly together, so as to form a sort of cylinder, whose diameter is equal to that of the ball which is adapted to the cannon.

Case or canister-shot (Fr. charge à mitraille), fig. 7, is formed by putting a quantity of small shot into a case or canister.

The tin case is cylindrical, in diameter a little less than the calibre of the gun or howitzer. It is filled with lead balls, so as to make up the weight of the shot. These balls are seldom less than one ounce and a quarter in weight. But little effect is to be expected from firing case-shot beyond 300 yards, from the very great divergency of the balls. The proportions of shot for the royal navy are,

• Round for ships	{ Lower-deck . . .	{ Middle, upper, and	{ 60 round each gun for Chan. Serv.
		{ quarter-deck . . .	{ do. for Foreign do.
Ditto for sloops . . . . .			{ 70 do. for Chan. do.
			{ 100 do. for Foreign do.
			{ 50 do. for Chan. do.
			{ 60 do. for Foreign do.

Grape and case-shot are supplied each in the proportion of from five to twelve rounds for every gun, as the nature of the service may require. There are other sorts of shot formerly used, such as the chain, cross-bar, langrel, &c., but these are now nearly discontinued in the British navy.

Chain-shot (Fr. boulets enchaînés), fig. 8, consists of two balls linked together, being principally designed to destroy the masts and rigging, which they are better fitted to perform than the single bullets.

Double-headed or bar-shot (Fr. boulet ramé, ou boulet à deux têtes), fig. 9, is a ball cut into two equal parts, and joined together by a bar of iron. In the French service the middle is sometimes filled with a composition, and the whole covered with linen dipped in brimstone; the cannon in firing also inflames the combustibles or composition of this ball, which sets fire to the sails of the vessel. One of the heads of this ball has a hole to receive a fuse, which communicates with the charge of the cannon.

Spherical case-shot, or Shrapnell's shell, so termed from the inventor colonel Shrapnell, of the royal artillery. See SHELL.

Star-Shot consists of four pieces of iron, whose bases, when separate, form the quadrant of a circle; so that the whole, being joined, forms a cylinder equal to the shot of the cannon. Each of those pieces is furnished with an iron bar, the extremity of which is attached to a sort of link, as keys are strung upon a ring. Being discharged from the gun, the four branches or arms extend every way from the link in the centre. These also are chiefly intended to destroy the sails or rigging, but their flight and execution are very precarious at a tolerable distance.

A Shot of a most destructive nature has been invented by a Mr. Fane, and experiments on its effects were exhibited in 1811, before the lords of the admiralty. It is a four-pounder shot, wrapped round with a prepared cotton, and made very hard, so as to appear like a large cannon-ball—on firing of which, it has the usual effect of a cannon-shot; but, the moment it starts from the cannon's mouth, it presents one solid mass of fire; and whatever it may happen to strike, whether rigging or hull of a ship, it will immediately take fire.

To find the weight of an iron shot, whose diameter is given; and the contrary. *Rule.*—Double the cube of the diameter in inches, and multiply it by 7; so will the product (rejecting the two last or right hand figures) be the weight in pounds. *Example.*—What is the weight of an iron shot of seven inches diameter? The cube of 7 is 343, which doubled is 686, and this multiplied by 7 produces 4802, which, with the

right hand figures rejected, gives 48 lbs., the weight required.

To find the diameter of the shot, when the weight is given. *Rule.*—Multiply the cube root of the weight in pounds by 1.923, and the product is the diameter in inches. *Example.*—What is the diameter of an iron shot of 52 lbs.? The cube root of 52 is 3.732, which, multiplied by 1.923, gives 7.177 inches, the diameter required.

*Rule,* by logarithms:—

To one-third of the logarithm of 52 . . . 0.572001  
Add the constant logarithm . . . 0.283979

Logarithm of the diameter . 7.117 = 0.855980

TABLE OF DIAMETERS OF ENGLISH ROUND SHOT.

Nature.	68	42	32	24	18
Inches.	8	6.684	6.105	5.475	5.043
Nature.	12	9	6	3	1
Inches.	4.403	4.000	3.498	2.775	1.92

TABLE OF GRAPE SHOT FOR SEA-SERVICE.

Nature.	Weight of each Shot.	Total Weight of the Grape complete.	
		lbs.	oz.
24 pounder	4 —	46	6
32 . . .	3 —	34	1
24 . . .	2 —	25	5
18 . . .	1 8	19	15 $\frac{1}{4}$
12 . . .	1 —	10	15
9 . . .	— 13	7	6
6 . . .	— 8	5	8 $\frac{1}{2}$
4 . . .	— 6	3	14 $\frac{1}{2}$
3 . . .	— 4	2	10 $\frac{1}{2}$
$\frac{1}{2}$ . . .	— $\frac{3}{4}$ lead.	—	8 $\frac{1}{4}$

Small shells, as four inches and two-fifths, and hand-grenades, were quilted into grape for thirteen-inch mortars, at Gibraltar. The fuses were turned inwards next the iron tompon, and leaders of quick-match for communicating fire to the fuses were introduced through holes made in the wooden bottom, and placed as near the fuse as possible, in the centre of the grape. These answered very well for short ranges.

TABLE OF ENGLISH CASE-SHOT FOR SEA-SERVICE.

Nature.	Sea Service.					Carronades.					For Mortars.					Howitzers.				
	Weight of each Shot.	Number in each Case.	Weight of each Case filled.	Nature.	Weight of each Shot.	Number in each Case.	Weight of each Case filled.	Inches.	Weight of each Shot.	Number of Shot in each.	Weight of each Case filled.	No.	Weight of each Shot.	Number of Shot in each.	Weight of each Case filled.	No.	Weight of each Shot.	Number of Shot in each.	Weight of each Case filled.	
Prs.	oz.	No.	lbs. oz.	Prs.	oz.	No.	lbs. oz.													
32	8	70	33 8																	
24	8	42	22 15																	
18	6	42	16 8																	
12	4	42	11 5	68	8	90	46 2													
9	3	44	8 9	42	8	66	32 8													
6	2	40	5 2	32	8	40	21 4													
4	2	28	4 —	24	8	32	16 1													
3	2	20	2 15	18	6	31	12 2													
1	1½	12	1 2½	12	4	32	8 2													

If at any time case-shot cannot be procured, or tin for the purpose of making cases, a very good substitute may be made by the following method:—Take a wooden bottom of one-fourth of an inch less than the ordinary size, roll strong cartridge paper which has been sponged over two or three times with water, and nearly dry, on a former of the same diameter to the proper dimensions; paste down the exterior edge of the cylindrical case, and nail it on to the bottom with small tacks; when dry, pour in a quantity of hot pitch and rosin, or kitt composition; then a layer of musket-balls; continuing them alternately till the case is filled in length equal to two diameters of a round shot, independent of the wooden bottom; over the last tier put another bottom two inches in thickness, and nail it on.

To SHOT THE GUNS (Fr. mettre les boulets dans les canons) is to load the pieces of ordnance with the necessary quantity of gunpowder and ball.

SHOT, TIN CASE, in artillery, is formed by putting a great quantity of small iron shot into a cylindrical tin box called a cannister, that just fits the bore of the gun. Leaden bullets are sometimes used in the same manner; and it must be observed that, whatever number of sizes of the shots are used, they must weigh with their cases nearly as much as the shot of the piece.

SHOT FLAGGON, a sort of flaggon somewhat bigger than ordinary, which in some counties, particularly Derbyshire, it is the custom for the host to serve his guests in, after they have drunk above a shilling.

SHOT OF A CABLE, on ship-board, is the splicing of two cables together, that a ship may ride safe in deep waters and in great roads; for a ship will ride easier by one shot of a cable, than by three short cables out a-head.

SHOT-BOXES (Fr. caisse à munitions) are boxes in which grape, case, and small-arms' shot, are packed for service.

SHOTE, n.s. Sax. *peota*; Lat. *trutta minor*. A fish.

The *shote*, peculiar to Devonshire and Cornwall, in shape and colour resembleth the trout; howbeit in bigness and goodness cometh far behind him.

Carew.

SHOT-GUAGE, an instrument for measuring the diameter of shot.

SHOT-RACKS, wooden frames bolted to the coamings and head-ledges round the hatch-ways on the decks, to contain the different species of shot.

SHOVE, v. a., v. n., & n.s. Sax. *pefan*; Belg. *schuyven*; Swed. *skufwa*. To push by main strength; drive; rush against; impel: to push before one; move by a pole in a boat: the act of shoving or pushing.

The hand could pluck her back that shove her on.  
Shakespeare.

In the corrupted currents of this world,  
Offence's gilded hand may shove by justice;  
And oft the wicked prize itself  
Buys out the law.

Id.

Of other care they little reckoning make,  
Than how to scramble at the shearer's feast,  
And shove away the worthy bidden guest. Milton.

There the British Neptune stood,  
Beneath them to submit the officious flood,  
And with his trident shove them off the sand.

Dryden.

Shoving back this earth on which I sit,  
I'll mount. Id. Tyrannick Love.

He grasped the oar,  
Received his guest aboard, and shored from shore.

Garth.

A strong man was going to shove down St. Paul's cupola. Arbuthnot.

Id.

He used to shove and elbow his fellow-servants to get near his mistress, when money was a paying or receiving.

Id.

Behold a reverend sire  
Crawl through the streets, shoved on or rudely pressed

Pope.

By his own sons.  
You've played and loved, and eat and drank your fill;

Walk sober off, before a sprightlier age

Come tittering on, and shove you from the stage.

Id.

Eager to express your love,  
You ne'er consider whom you *shove*,  
But rude press before a duke.

*Swift.*

The seamen towed, and I *shoved*, till we arrived  
within forty yards of the shore. *Gulliver's Travels.*

I was forced to swim behind, and pushed the  
boat forward with one of my hands; and, the tide  
favouring me, I could feel the ground: I rested  
two minutes, and then gave the boat another *shove*,

*Id.*

Cards were superfluous here, with all the tricks  
That idleness has ever yet contrived  
To fill the void of an unfurnished brain,  
To palliate dulness, and give time a *shove*. *Cowper.*

**SHOV'EL**, *n. s. & v. a.* *Sax. scopl; Teut.*

**SHOV'ELBOARD**, *n. s.* *schoeffel.* An instru-

**SHOV'ELLER.** *ment to throw or heap*

*up with: to throw or heap up; to gather in great quantities: shovelboard is a board on which metal pieces are shoved along at a mark: a shoveller is one who uses a shovel, also a bird.*

A handbarrow, wheelbarrow, *shovel*, and spade.

*Tusser.*

I thought

To die upon the bed my father died,  
To lie close by his honest bones; but now  
Some hangman must put on my shroud, and lay me  
Where no priest *shovels* in dust.

*Shakespeare. Winter's Tale.*

Pewts, gulls, and *shovellers*, feed upon flesh, and  
yet are good meat.

*Bacon.*

Ducks *shovel* them up as they swim along the  
waters; but divers insects also devour them.

*Denham.*

The brag of the Ottoman, that he would throw  
Malta into the sea, might be performed at an easier  
rate than by the *shovels* of his janizaries.

*Glanville's Sepsis.*

So have I seen in hall of lord,  
A weak arm throw on a long *shovelboard*;  
He barely lays his piece.

*Dryden.*

This formation of the wizzon is not peculiar to  
the swan, but common unto the platea, or *shovelard*,  
a bird of no musical throat.

*Browne's Vulgar Errors.*

*Shoveller*, or spoon-bill: the former name the more  
proper, the end of the bill being broad like a *shovel*,  
but not concave like a spoon, but perfectly flat.

*Grew's Museum.*

**SHOVEL**, **DRAINING**, a tool employed for the  
purpose of clearing out the loose crumbly earthy  
materials from the bottom parts of drains. It is  
formed with a crooked handle, the edges of the  
shovel part being turned up on the sides, in order  
to prevent the materials which are scraped  
up from falling off. In consequence of the  
crookedness of the handle, the workman is  
prevented from stooping so much as would otherwise  
be the case, in performing the work. There  
are different constructions of this implement  
made use of, in managing business of this sort.  
A scoop is sometimes made use of, both with and  
without this implement, for the purpose of  
scooping up and clearing out all the crumbs,  
loose mould, and other similar materials, from  
the bottom parts of drains, before they are laid  
or filled with spray, brush-wood, or any other  
substance, in order that they may be quite clear  
and free of any sort of obstruction. The tool is  
formed in a crooked scoop-like manner at the  
head, and of different shapes, sizes, and breadths,

according to the nature of the drains and openings  
in which it is to be employed; being, in  
working, drawn, or pushed along the bottoms of  
the cuts or drains. The handle has also occasionally  
a crooked form, in order to ease the  
workman in using it.

**SHOVEL**, **PARING**, a tool employed in paring  
off the sward or turf from the surface of ground,  
in order to burn it. The shovel which is used  
in Devonshire for this purpose has a hollow  
heart-shaped form in the shovel part, with a long  
handle, which makes it a very powerful implement.  
The plate of the mouth part is from nine  
to ten inches in width, where the handle is inserted,  
which is made with a considerable curve  
upwards; the blade is about twelve inches in  
length, terminating with a broad angular point,  
which, with its sides, are constantly kept very  
sharp and keen for cutting; on the left hand, or  
land side of the tool, a sharp wing, comb, or  
coulter, rises up in an oblique manner, to cut  
and divide the slice part from the whole ground.  
This, however, in consequence of the toughness  
of the surface, and the impediments presented by  
the roots of furze, flags, heather, and other  
similar matters, is not unfrequently dispensed  
with; the slice being rent or torn off by the work-  
man from the side of the whole ground, while it  
is cut up and separated from the earth below.  
When a foot or fifteen inches of the slice rises  
upon the handle of the shovel, it is separated  
from the uncut part of the surface by a sudden  
effort or exertion with the tool, and by a turn of  
it is whelmed or laid over the mould side upwards.  
Where the state and circumstances of  
the surface will permit, as by not being too much  
loaded and encumbered with the above sorts of  
plants, the effort of separating the cut from the  
uncut sward may in all cases be much lessened  
by having the slice, which is next to be pared,  
cut or nicked in such lengths as may be most  
convenient to the workmen. And, in some partic-  
ular places and situations of land, the regular  
nicking of the slice to be pared from the ground  
is indeed found indispensably necessary, as where  
the ground is of such a moory quality as to render  
the operation impracticable without it. In all  
such instances it is, however, probably much  
better, as being more convenient and expeditious,  
to have the shovel formed with a cutting wing,  
by which the whole may be done at once, without  
any sort of delay in the business.

**SHOVEL** (Sir Clodesly), a brave English  
admiral, born about 1650, of parents rather in  
the lower rank of life. He was put apprentice  
to a shoemaker; but, disliking this profession, he  
abandoned it and went to sea. He was at first  
a cabin boy with Sir Christopher Myngs, but,  
applying to the study of navigation with indefatigable  
industry, his skill as a seaman soon raised him.  
The corsairs of Tripoli having committed great outrages on the English in the  
Mediterranean, Sir John Narborough was sent in  
1674 to reduce them to reason. As he had received  
orders to try the effects of negociation before he  
proceeded to hostilities, he sent Mr. Shovel, then  
a lieutenant in his fleet, to demand satisfaction.  
The dey treated him with a great deal of dis-  
respect, and sent him back without an answer. Sir

John despatched him a second time, with orders to remark particularly the situation of things on shore. The behaviour of the dey was worse than ever. Upon Mr. Shovel's return he informed Sir John that it would be possible, notwithstanding their fortifications, to burn all the ships in the harbour. The boats were accordingly manned, and the command of them given to lieutenant Shovel, who seized the guardship and burnt four others, without losing a man. This action so terrified the Tripolins that they sued for peace. Sir John Narborough gave so favorable an account of this exploit that Mr. Shovel was soon after made captain of the Sapphire, a fifth rate ship. In the battle of Bantry Bay, after the revolution, he commanded the Edgar, and, for his gallant behaviour in that action, was knighted by king William. Next year he was employed in transporting an army into Ireland; a service which he performed with so much diligence and dexterity that the king raised him to the rank of rear admiral of the blue, and delivered his commission with his own hands. Soon after he was made rear admiral of the red, and shared the glory of the victory at La Hogue. In 1694 he bombarded Dunkirk. In 1703 he commanded the grand fleet in the Mediterranean, and did every thing in his power to assist the Protestants who were in arms in the Cevennes. Soon after the battle off Malaga he was presented by prince George to queen Anne, who received him graciously, and next year employed him as commander-in-chief. In 1705 he commanded the fleet, together with the earls of Peterborough and Monmouth, which was sent into the Mediterranean; and it was owing to him chiefly that Barcelona was taken. After an unsuccessful attempt upon Toulon, he sailed for Gibraltar, and thence homeward with a part of the fleet. On the 22nd of October, at night, his ship, with three others, was cast away on the rocks of Scilly. See SCILLY. All on board perished. His body was found by some fishermen on the island of Scilly, who stripped it of a valuable ring and afterwards buried it. Mr. Paxton, the purser of the Arundel, hearing of this, found out the fellows, and obliged them to discover where they had buried the body. He carried it on board his own ship to Portsmouth, whence it was conveyed to London, and interred with great solemnity in Westminster Abbey. A monument was afterwards erected to his memory by the direction of the queen. He had married the widow of his patron, Sir John Narborough, by whom he left two daughters, co-heiresses.

SHOVELLER, in ornithology. See ANAS. The shoveller and spoonbill, mentioned above as synonymous by Dr. Grew, are quite different species or rather genera of birds: the shoveller is a species of anas: the spoonbill is the English name of the genus *platlea*. Brown is also in the same mistake.

SHOGHII, n. s. For shock. A species of shaggy or shock dog.

In the catalogue ye be for men,  
As hounds and greyhounds, mongrels, spaniels, curs,  
Shoughs, water-rugs, and demi-wolves, are 'cleped  
All by the name of dogs. *Shakspeare. Macbeth.*

SHOULD, v. n. See SHALL.

SHOUL'DER, n. s. & v. a.	Sax. <i>feuldeþ</i> ; Belg. <i>scholder</i> ; Dan. <i>skulder</i> .
SHOUL'DERBLADE,	The upper joint of the arm; upper
SHOUL'DERCLAPPFR,	joint of the fore
SHOUL'DERSHOTTEN, adj.	leg of certain animals; any prominent or rising part: the strength of any thing: the shoulderblade is the scapula: shoulderclapper, one who coaxes or one who betrays: shouldershotten is strained: shoulderslip, dislocation in the shoulder.

If I have lifted up my hand against the fatherless, when I saw my help in the gate, then let mine arm fall from my shoulder-blade, and mine arm be broken from the bone. *Job xxxi. 22.*

I have seen better faces in my time  
Than stand on any shoulder that I see  
Before me. *Shakspeare.*

We must have shoulder of mutton for a property. *Id.*

His horse waid in the back, and shoulder-shotten. *Id.*

A fiend, a fury, pitiless and rough,  
A back friend, a shoulder-clapper, one that commands  
The passages of alleys. *Id. Comedy of Errors.*

Dudinan, a well-known foreland to most sailors, here shoulders out the ocean, to shape the same a large bosom between itself. *Carew's Survey of Cornwall.*

It is a fine thing to be carried on men's shoulders; but give God thanks that thou art not forced to carry a rich fool upon thy shoulders, as those poor men do. *Taylor.*

Archimedes's, lifting up Marcellus's ships, finds little more credit than that of the giant's shoulderings mountains. *Glanville.*

Emily dressed herself in rich array;  
Fresh as the month, and, as the morning fair,  
Adown her shoulders fell her length of hair. *Dryden.*

So vast the navy now at anchor rides,  
That underneath it the pressed waters fail,  
And, with its weight, it shoulders off the tides. *Id.*

When you rivet a pin into a hole, your pin must have a shoulder to it thicker than the hole is wide, that the shoulder slip not through the hole as well as the shank. *Moxon.*

Around her numberless the rabble flowed,  
Shouldering each other, crowding for a view. *Rowe's Jane Shore.*

He took occasion from a shoulder of mutton to cry up the plenty of England. *Addison's Freeholder.*

The head of the shoulder bone, being round, is inserted into so shallow a cavity in the scapula, that, were there no other guards for it, it would be thrust out upon every occasion. *Wiseman.*

When Hopkins dies, a thousand lights attend  
The wretch who living saved a candle's end;  
Shouldering God's altar a vile image stands,  
Belies his features, nay, extends his hands. *Pope.*

The horse will take so much care of himself as to come off with only a strain or a shoulder-slip. *Swift.*

But rude at first, and not with easy slope  
Receding wide, they pressed against the ribs,  
And bruised the side; and, elevated high,  
Taught the raised shoulders to invade the ears.  
Long time elapsed or e'er our rugged sires  
Complained, though incommodiously pent in,  
And ill at ease behind. *Cowper.*

SHOUT, v. n. & n. s.	A word of which no
SHOUT'ER, n. s.	etymology is known, says Dr. Johnson. Arab. <i>sout, zeut</i> ; Goth. <i>tauta</i> .—Thomson. To cry in triumph or exhor-

tation : a vehement or loud cry of this kind ; the other noun substantive corresponding.

*Show unto God with the voice of triumph.*

*Psalm xlvi. 1.*

The shouting for thy summer fruits and harvest is fallen. *Isaiah.*

It is not the voice of them that shout for mastery.

*Ex. xxxii.*

The Rhodians, seeing the enemy turn their backs, gave a great shout in derision.

*Knotles's History of the Turks.*

Thanks, gentle citizens :

This general applause and cheerful shout  
Argues your wisdom and your love to Richard.

*Shakspeare.*

They shouted thrice : what was the last cry ? *Id.*

He storms and shouts ; but flying bullets now To execute his rage appear too slow :

They miss, or sweep but common souls away ;

For such a loss Opdam his life must pay. *Waller.*

All clad in skins of beasts, the javelin bear ;  
And shrieks and shoutings rend the suffering air.

*Dryden.*

What hinders you to take the man you love ?  
The people will be glad, the soldiers shout ;

And Bertran, though repining, will be awed. *Id.*

A peal of loud applause rang out,  
And thinned the air, till even the birds fell down Upon the shouter's head. *Id. Cleomenes.*

There had been nothing but howlings and shoutings of poor naked men, belabouring one another with snagg'd sticks. *More.*

**SHOUT**, clamor, in antiquity, was frequently used on ecclesiastical, civil, and military occasions, as a sign of approbation, and sometimes of indignation. Thus as Cicero, in an assembly of the people, was exposing the arrogance of L. Antony, who had the impudence to cause himself to be inscribed the patron of the Romans, the people, on hearing this, raised a shout to show their indignation. In the ancient military discipline shouts were used, 1. Upon occasion of the general's making a speech or harangue to the army from his tribunal. This they did in token of their approving what had been proposed. 2. Before an engagement, in order to encourage and spirit their own men, and fill the enemy with dread. This is a practice of great antiquity ; for, as mankind are endowed with two senses, hearing and seeing, by which fear is raised in the mind, it is proper to make use of the ear as well as the eye for that purpose. Shouts were also raised in the ancient theatre, when what was acted pleased the spectators. It was usual for those present at the burning of the dead to raise a great shout, and call the dead person by his name, before they set fire to the pile.

**SHOW**, *v. a., v. n., &c.* *Pret.* showed and

**SHOWBREAD**, *[n.s.]* shown ; *part. pass.*

**Show'ish**, *adj.* *[n.s.]* shown. *Sax. rceapan ;*

**Show'y.** *[n.s.]* Belg. *schowen.* This word, frequently written shew, is always pronounced show ; which is favored by the Belg. *schowen* and Teut. *schauen*. To exhibit ; give to sight ; make to see ; prove ; explain ; inform ; publish ; discover : to appear ; look ; have appearance : a show is a spectacle ; mere appearance ; semblance ; likeness ; exhibition ; pomp ; phantom : for the bread see **SHOWBREAD** : showish and showy mean, glaring ; ostentatious ; pompous.

I raised thee up to *shew* in thee my power.

*I.r. ix. 16.*

Set upon the table *shew-bread* before me.

*Id. xxv. 30.*

Thou shalt utterly destroy them ; make no covenant with them, nor *shew* mercy unto them.

*Deut. vii. 2.*

To him that is afflicted pity should be *shewed* from his friend.

*Job vi. 14.*

Wilt thou *shew* wonders to the dead ? Shall the dead arise and praise thee ? *Psalm lxxxviii. 10.*

Forasmuch as knowledge and *shewing* of hard sentences, and dissolving of doubts, were found in the same Daniel, let him be called. *Dan. v. 12.*

Felix willing to *shew* the Jews a pleasure, left Paul bound. *Acts xxiv. 27.*

Ye are a chosen generation, that ye should *shew* forth the praises of him who hath called you out of darkness. *1 Peter ii.*

Shall I say O Zelmane ? Alas, your words be against it. Shall I say prince Pyrocles ? Wretch that I am, your *show* is manifest against it. *Sidney.*

The places of Ezechiel have some *show* in them, for there the Lord commanded the Levites which had committed idolatry to be put from their dignity, and serve in inferior ministries. *Whitgift.*

My lord of York, it better *showed* with you,  
When that your flock, assembled by the bell,  
Encircled you, to hear with reverence  
Your exposition on the holy text,  
Than now to see you here, an iron man,  
Cheering a rout of rebels with your drum.

*Shakspeare. Henry IV.*

She *shew* a body rather than a life,  
A statue than a brother.

*Id. Antony and Cleopatra.*

When devils will their blackest sins put on  
They do suggest at first with heavenly *shows*.

*Id. Othello.*

As for triumphs, masks, feasts, and such *shows*,  
men need not be put in mind of them. *Bacon.*

Mild heaven

Disapproves that care, though wise in *show*,  
That with superfluous burden loads the day.

*Milton.*

Nor doth his grandeur and majestic *show*  
Of luxury, though called magnificence,  
Allure mine eye. *Id. Paradise Regained.*

He through passed the midst unmarked,  
In *show* plebeian angel militant. *Milton.*

Nothing wants, but that thy shape,  
Like his, and color serpentine may *show*  
They inward fraud, to warn all creatures from thee.

*Id.*

A shooting star

In autumn thwarts the night, when vapours fired  
Impress the air, and *shows* the mariner  
From what point of his compass to beware  
Impetuous winds. *Id.*

Nor want we skill or art, from whence to raise  
Magnificence, and what can heaven *shew* more ? *Id.*

This I urge to *show*

Invalid that which thee to doubt it moved. *Id.*

I through the ample air in triumph high,  
Shall lead hell captive, maugre hell, and *show*  
The powers of darkness bound. *Id.*

Achates' diligence his duty *shows*. *Dryden.*

Stand before her in a golden dream ;  
Set all the pleasures of the world to *show*  
And in vain joys let her loose spirits flow. *Id.*

The kindred of the slain forgive the dead ,  
But a short exile must for *show* precede. *Id.*

Just such she *shows* before a rising storm. *Id.*

What you saw was all a fairy show;  
And all those airy shapes you now behold  
Were human bodies once.

*Id.*

Men should not take a charge upon them that they  
are not fit for, as if singing, dancing, and showing of  
tricks, were qualifications for a governor.

*L'Estrange.*

I do not know what she may produce me; but,  
provided it be a show, I shall be very well satisfied.

*Addison.*

The city itself makes the noblest show of any in  
the world: the houses are most of them painted on  
the outside, so that they look extremely gay and  
lively.

*Id.*

Florio was so overwhelmed with happiness that he  
could not make a reply; but expressed in dumb show  
those sentiments of gratitude that were too big for  
utterance.

*Id.*

Men of warm imaginations neglect solid and sub-  
stantial happiness for what is showy and superficial.

*Id.*

Never was a charge maintained with such a show  
of gravity which had a slighter foundation.

*Attberry.*

The dwarf kept the gates of the show room.

*Arbuthnot.*

The radiant sun

Sends from above ten thousand blessings down,  
Nor is he set so high for show alone.

*Granville.*

She taking him for some cautious city patient, that  
came for privacy, shews him into the dining-room.

*Swift.*

The escutcheons of the company are showish, and  
will look magnificent.

*Id.*

Still on we press; and here renew the carnage,  
So great that in the stream the moon showed purple.

*Philip.*

I envy none their pageantry and show,  
I envy none the gilding of their woe.

*Young.*

SHOW'ER, n.s. & v.a. { Sax. *regn*; Belg.

SHOW'ERY, adj. { *scheure*; Goth.

*skura.* Rain either moderate or violent: hence  
any liberal distribution: to pour down; wet with  
rain; scatter or distribute profusely: showery is  
rainy; abundant in showering.

He and myself

Have travelled in the great shower of your gifts,  
And sweetly felt it.

*Shakspeare. Timon.*

I'll set thee in a shower of gold, and hail  
Rich pearls upon thee.

*Id. Antony and Cleopatra.*

If the boy have not a woman's gift,  
To rain a shower of commanded tears,

An onion will do well for such a shift.

*Shakspeare.*

A hilly field where the stubble is standing, set on  
fire in the showery season, will put forth mushrooms.

*Bacon.*

The ancient cinnamon was, while it grew, the  
driest; and in showers it prospered worst.

*Id.*

After this fair discharge, all civil honours having  
showered on him before, there now fell out occasion to  
action.

*Wotton.*

Give me a storm; if it be love,  
Like Danaë in the golden shower,

I swim in pleasure.

*Carew.*

Serve they as a flowery verge, to bind  
The fluid skirts of that same watery cloud,  
Lest it again dissolve and shower the earth?

*Milton.*

These, lulled by nightingales, embracing slept;  
And on their naked limbs the flowery roof  
Showered roses, which the morn repaired.

*Id. Paradise Lost.*

Murranus came from Anxur's showery height,  
With ragged rocks and stony quarries white,  
Seated on hills.

*Addison on Italy.*

Cæsar's favour,  
That showers down greatness on his friends, will  
raise me

To Rome's first honours.

*Id. Cat.*

With showers of stones he drives them far away;  
The scattering dogs around at distance bay.

*Pope.*

His frisking was at evening hours,

For then he lost his fear,

But most before approaching showers,

*Couper.*

Or when a storm drew near.  
When no soft shower descends, no dew distils,  
Her wave worn channels dry, and mute her rills;  
When droops the sickening herb, the blossom fades,  
And parched earth gapes beneath the withered glades.

*Darwin.*

SHOWER, in meteorology, a cloud condensed to rain. See CLOUDS, METEOROLOGY, and RAIN.

SHOWER (John), an eminent nonconformist divine, born in London in 1660, and educated under Mr. Doolittle at Islington. In 1687 he became pastor of a congregation in Jewin Street. He was eminent for his piety, and published Sacramental Sermons, and Reflections on Time and Eternity; two works much esteemed. He died at Illoston in 1718, aged fifty-eight.

SHOWERS OF STONES, &c. In the ancient histories of most nations marvellous anecdotes are told, and wonderful facts seriously recorded, of preternatural rains; such as the raining of stones, of sand, of dust, of blood, nay even of living animals, such as fish, young frogs, &c., from the clouds. That in the early periods of society, when historical records were not regularly kept, and when consequently historical facts were few and of little importance, historians should have been anxious to collect every thing wonderful that tradition or credulity invented or reported, to render their histories entertaining and agreeable to the taste of those times, is by no means surprising. Herodotus, one of the most ancient and respectable of the Grecian historians, has filled his history with miracles of every kind that he could collect in all the countries through which he travelled. Livy, one of the best of the Roman historians, followed his example, and has interlarded his history, otherwise respectable, with numerous fables and pretended miracles. In the dark ages of modern times, when history was chiefly entrusted to the priests and monks, it is not surprising that the same plan should have been continued of collecting and recording every report, and the more wonderful, i.e. the more incredible, the better. But that in the present age, when scepticism is so prevalent that not only the most important truths of revealed religion are called in question, but mathematical demonstration is required for almost every thing in history and science; that at such a period, and in such a nation as France, where infidelity still prevails, in spite of Buonaparte's hypocrisy, more than in any other nation in Europe, a philosopher should be found pleading seriously for the truth and possibility of such preternatural showers, is one of those phenomena in the history of the human mind which seems totally unaccountable. Yet the learned Joseph Izarn, M.D., professor of natural philosophy, member of the Society of Sciences, Belles Lettres, and Arts, of Paris, &c. &c., has, within these two years, published a work at Paris, consisting of 430 pages,

entitled *Des Pierres tombées du Ciel, &c., i.e. A Treatise on Stones fallen from the Clouds; or, Atmospheric Lithology; exhibiting the Progress and actual State of the Science; a View of the Phenomena of Thunder Stones, Showers of Stones, Stones fallen from the Heavens, &c., several unpublished Observations, with an Essay on the Theory of the Formation of the Stone.* From this extraordinary work we suppose a very few extracts will sufficiently gratify the curiosity of our readers:—I. ‘According to Paul Lucas,’ says the Dr., ‘an eye witness, a stone fell from the air at Larissa, in Macedonia, in January 1706.’ It weighed 72 lbs., resembled the dross of iron, and was seen to proceed from the north, with a loud hissing, apparently enveloped in a small cloud, from which it burst, and fell with a very loud explosion.’ II. ‘The celebrated Gas-sendi, whose accuracy is allowed to have equalled his knowledge, relates that, on the 27th November 1627, when the sky was very clear, he saw a burning stone, apparently four feet in diameter, fall on mount Vaiser, between the towns of Guillaumes and Perne in Provence. It was surrounded by a luminous circle of different colors, like a rainbow; and its fall was accompanied by a noise like that of many canons fired at once. This stone weighed 59 lbs. Its weight was to that of marble as 14 to 11.’ III. ‘A shower of common and very fine sand fell in the Atlantic, at eight or nine leagues from land, on the 6th of April 1719, and continued from ten o’clock P. M. till one P. M. of the following day.’ IV. ‘In September 1753, about one P. M., the weather being very warm and serene, without any clouds, a great noise was heard like the firing of two or three cannons. Though of very short duration, it was audible at the distance of six leagues in every direction. It was loudest in the neighbourhood of Pont de Vesle. A hissing sound, like that of a squib, was likewise heard at Liponas, a village three leagues from Pont de Vesle, and four from Bourg. On the same evening there were found at Liponas, and at Pin, a village near Pont de Vesle, three leagues from Liponas, two blackish masses, of a figure nearly circular, but very unequal, which had fallen on ploughed ground, into which they had sunken half a foot by their own weight. One of them weighed about 20 lbs. They were broken, and the fragments were shown to all the curious. A similar noise was heard on St. Peter’s day, in 1750, in Lower Normandy; and a mass very nearly of the same nature, but much larger, fell at Niort. One of the stones, weighing 11½ lbs., may be seen at Dijon, in the museum of M. Varenne de Beost, principal secretary to the states of Burgundy, and correspondent of the Royal Academy of Sciences at Paris.’—M. De Lalande’s Narrative, in the Historical Almanack of Bresse, 1756. V. Messrs. Chladén, Pallas, A. G. Duluc, Patrin, and others, mention a mass of native iron that fell from the clouds in Siberia. But, as the truth of this story rests on a doubtful tradition among the Tartars, it merits no credit. VI. A more remarkable instance of the fall of stones than any which Dr. Izarn has recorded, has been related with artless simplicity by M. Marais, an inhabitant of Aigle in Normandy,

and in more scientific language by M. Biot, member of the National Institute, who was commissioned by government to investigate the fact. This gentleman observes, in his truly wonderful report, that ‘the district in which the stones were precipitated forms an elliptical extent of nearly two leagues and a half, and of about one in breadth; the greater dimension being in a direction from south-east to north-west, with a declination of about 22°, thus curiously coinciding with the magnetic meridian. The largest stone which fell weighed about 17½ lbs., and the smallest about 1000th part of that weight. The whole number of stones exceeded 2000 or 3000!’ See *Journal de Physique; Prairial, Année xi, and Journal des Débats, 14 Thermidor, Année xi.* Such are the principal facts related by Dr. Izarn in support of his system of atmospheric lithology. His anecdotes of showers of fire we need not quote, as no person who knows how universally the electric fluid is diffused through the atmosphere, and who has considered its powerful effects in producing storms of thunder and lightning, fire-balls, luminous meteors, &c., will doubt that it may on some occasions have assumed the form of a shower of fire. But Dr. Izarn, in his zeal for his system of atmospherical lithology, endeavours to establish and account for it, by connecting it with something like atmospherical electricity (though he elsewhere rejects all connexion with that powerful fluid), in the following conclusions:—1. That very considerable masses have sometimes fallen to the earth. 2. That these masses, penetrated by fire, roll in the atmosphere, like burning globes, which diffuse light and heat to great distances. 3. That they seem to have received a motion parallel to the horizon, though they really describe a curve. 4. That they become soft, or are fused into a paste-like consistency, as is proved by their varnished substance, and the impressions formed on their surface by the bodies which they encounter. 5. That they have fallen in England, Germany, Italy, France, and the East Indies. 6. That all these stones resemble one another in their physical characters and chemical composition.’ After having laid down some general maxims relative to natural appearances, illustrated the principal, that substances may exist in a solid, liquid, or gaseous modification, without undergoing any change of identity, and estimated the application of this recognized fact, Dr. Izarn endeavours to establish his philosophical transubstantiation by these four conclusions: 1. ‘That there must exist, in the gaseous mass which envelopes our globe, different aerial substances, which are unknown to us, which are mostly insulated by one another, and disposed in spherical masses (*massées sphériquement*), by the pressure which is exercised on them in all directions. 2. That detonations take place in the atmosphere, which are not the consequence of electrical phenomena; and which perhaps have nothing in common with electricity. 3. That we ought not to ascribe every luminous matter to the combustion of hydrogen, since the phenomena present us only with a disengagement of light, which may be effected by any gaseous substance passing into another state. 4. Lastly,

that the disengagement of light does not necessarily imply that of caloric; and that the more vivid it is the less are we warranted to state it as a cause of fusion, vitrification,' &c. 'Gaseous substances,' adds the Dr., 'arranged in spherical masses, in the upper regions of the air, being admitted, the various agitations of the atmosphere should naturally waft some of these masses from the medium which insulates them, into a medium capable of combining with them. If, then, the combination begins, the disengagement of light is explained. Hence this theory explains the phenomenon in its most minute details, and even when the phenomenon is incomplete!' By such dexterous management of his spherical gaseous masses, and with the help of double, treble, and nicely reduced combinations, Dr. Izarn concocts a subtle explanation of showers of sand, of winds, of stones, and of metalliferous vapors; and on the whole draws this general conclusion:—' Each of these bodies then, strictly speaking, is only a mineral abortion; a premature union of gaseous principles, combined in trouble and disorder, by perturbing circumstances; while, in the natural course of their destiny, they would proceed separately and in silence to their prototypes on the surface or in the bowels of the earth. This fact, therefore, is a mere anomaly in the grand act of mineralisation.' If any thing can exceed the absurdity of this incoherent mass of words without meaning, it is the doctor's lunatic idea of giving 'an algebraical demonstration of the possibility of stony substances being driven off from the moon into the earth's prevailing attraction!' 'Hence,' says this French physician, 'we infer that, taking for granted the existence of a propelling cause at the moon's surface, a cause adequate to the projection of bodies in every direction beyond the sphere of her attraction, a great many of these bodies would revolve in space, as satellites to our planet, while scarcely any but those which were driven off at small angles would fall on the earth's surface!' If this ridiculous supposition of Dr. Izarn's were possible, that any particle of matter could be driven off from one planet, beyond its atmosphere, so as to fall under the prevailing attraction of another planet, then all the celestial bodies might fall into their supposed original chaos, and the proverbial tale told by the Scottish nurses to children might be realized, that 'the lilt (firmament) would fall and smother the laverocks, or larks.' But see METEOROLOGY, and METEORIC STONES.

**SHRED**, *v. a. & n. s.* *Pret.* *shred*. Saxon *repeasan*. To cut into small pieces: the small pieces so made. Commonly used of cloth or herbs.

One gathered wild gourds, and *shred* them.

*2 Kings.*

It hath a number of short cuts or *shreddings*, which may be better called wishes than prayers. *Hooker.*

They said they were an hungry; sighed forth proverbs,

That hunger broke stone walls; that dogs must eat:

And with these *shreds* they vented their complainings.

*Shakspeare.*

Gold, grown somewhat churlish by recovering, is made more pliant by throwing in *shreds* of tanned leather.

*Bacon.*

The mighty Tyrian queen, that gained  
With subtle *shreds* a tract of land,  
Did leave it with a castle fair  
To his great ancestor.

*Hudibras.*

Where did you whet your knife to night, he cries  
And *shred* the leeks that in your stomach rise?

*Dryden's Juvenal.*

A beggar might patch up a garment with such  
*shreds* as the world throws away.

*Iove.*

*Shreds* of wit and senseless rhimes

Blundered out a thousand times.

*Swift.*

His panegyrick is made up of half a dozen *shred*,  
like a schoolboy's theme, beaten general topicks. *Id.*

**SHREW**, *n. s.*

*Belg. schreyen*, to

**SHREWD**, *adj.*

clamor. A peevish,

**SHREWDLY**, *adv.*

clamorous, vexatious

**SHREWDNESS**, *n. s.*

woman. It appears

**SHREWISH**, *adj.*

from Robert of Gloucester

**SHREWFISHLY**, *adv.*

cester and Shakspeare

**SHREWFISHNESS**, *n. s.* *j* that this word signified  
anciently any one perverse or obstinate, of either  
sex: shrewd seems originally to have been  
contracted from shrewed, i.e. having the qualities  
of a shrew; sly; mean; mischievous; trouble-  
some: the derivatives corresponding.

There dede of hem vor hunger a thousand and mo,  
and yat nolde the *screwen* to none pes go.

*Robert of Gloucester.*

Be merry, be merry, my wife has all;  
For women are *shrews* both short and tall.

*Shakespeare. Henry IV.*

By this reckoning he is more *shrew* than she.

*Shakespeare.*

Her eldest sister is so curst and *shrewd*,

That till the father rids his hands of her,

Your love must live a maid.

*Id.*

This practice hath most *shrewdly* past upon thee. *Id.*

Her garboiles, which not wanted *shrewdness* of  
policy too, did you too much disquiet. *Id.*

Angelo, you must excuse us;

My wife is *shrewish*, when I keep not hours. *Id.*

He speaks very *shrewishly*; one would think his  
mother's milk were scarce out of him. *Id.*

I have no gift in *shrewishness*,

I am a right maid for my cowardice;

Let her not strike me. *Id.*

At Oxford, his youth, and want of experience in  
maritime service, had somewhat been *shrewdly*  
touched, even before the sluices of popular liberty  
were set open.

*Wotton.*

It was a *shrewd* saying of the old monk, that two  
kind of prisons would serve for all offenders, an in-  
quisition and a bedlam: if any man should deny the  
being of a God, and the immortality of the soul, such  
a one should be put into the first, as being a des-  
perate heretic; but, if any man should profess to be-  
lieve these things, and yet allow himself in any  
known wickedness, such a one should be put into  
bedlam. *Tillotson.*

Her shallow checks her envious mind did *shew*,  
And every feature spoke aloud the *shrew*.

This last illusion rubbed upon the sore;  
Yet seemed she not to winch, though *shrewdly* pained.

*Id.*

A man had got a *shrew* to his wife, and there could  
be no quiet in the house for her. *L'Estrange.*

No enemy is so despicable but he may do a body  
a *shrewd* turn. *Id.*

When a man thinks he has a servant, he finds a  
traitor that eats his bread, and is readier to do him a  
mischief, and a *shrewd* turn, than an open adversary.

*South.*

The obstinate and schismatical are like to think

themselves *shrewdly* hurt, forsooth, by being cut off from that body which they choose not to be of. *Id.*

Corruption proceeds from employing those who have the character of *shrewd* worldly men, instead of such as have had a liberal education, and trained up in virtue. *Addison.*

Every one of them, who is a *shrew* in domestick life, is now become a scold in politicks.

*Id. Freeholder.*

The neighbours round admire his *shrewdness*,  
For songs of loyalty and lewdness. *Swift.*

SHREWSBURY, an ancient borough, market-town, and capital of the county of Shropshire, is 154 miles from London, 112 from Bath, and nearly equi-distant from Chester, Worcester, Birmingham, Stafford, and Hereford. Although no doubt can be entertained of the high antiquity of Shrewsbury, it being frequently mentioned by our earliest historians, there is no authentic record of its origin. Probable conjecture, however, has assigned that event to the fifth century, when the Britons were forced by the Saxons to abandon all the country to the eastward of the river Severn, and this proposition is well supported from its name, which is apparently of Saxon derivation, in which language it is called Scrobhesbyrig, or Scrobbesbyri, and in the ancient British language Pengwern; all signifying ‘the head of the alder groves.’ Shrewsbury, from its lofty and peninsular situation, presents at every approach a pleasing variety of views; and the noble sweep of the river, which seems to embrace it, heightens at every turn the charms of the scene, except on the north and west sides, where the streets approach close to its banks, a narrow margin of meadow or of garden ground interposes between the houses and the river. The exterior circle of the town is lined with an unbroken range of well-built houses, most of which command beautiful views over the adjacent country. On its western side is a public field, called the Quarry, which occupies about twenty acres of ground, and is adorned with avenues of trees.

Shrewsbury, being esteemed the most important town and fortress on the marches of Wales, continued during several centuries to be one of the principal places of rendezvous for the English armies, and hence it was often visited by its several monarchs. Numerous conflicts took place in its immediate vicinity, and its inhabitants frequently suffered the evils incident to sieges. Shrewsbury is a corporation, both by charter and prescription. By the charter now in force, granted by king Charles I., the corporation consists of a mayor, recorder, steward, town-clerk, twenty-four aldermen, forty-eight assistants, or common council-men, two chamberlains, a sword-bearer, serjeants at mace, &c. Four general quarter sessions are held in the course of the year; and the mayor and some of the aldermen, who are magistrates, hold a court every Tuesday; and the assizes for the county are held in the months of March and August. The chartered companies, besides the general corporations, are sixteen in number, of which those of the drapers and mercers are the most considerable. This town has sent members to parliament from its earliest establishment, who are elected by

about 1200 burgesses, born and being resident in the town, and paying scot and lot. The public buildings of Shrewsbury, besides the churches and chapels, are the castle, the town-hall, the town and county gaol and bridewell, the market-house, the butter market, the theatre, the bridges, and the splendid column in honor of lord Hill. The charitable institutions are, formerly dedicated to St. Giles; another called Millington’s hospital; several alms-houses; an infirmary; a dispensary for the diseases of the eye and ear, lately established in Raven Street; a house of industry; the charity schools; and various private societies for the relief of the sick and poor. A new infirmary is in progress of erection, upon a most extensive scale and praiseworthy plan; the expense of which, estimated at £20,000, will be defrayed entirely by the town and county. One of the principal ornaments of Shrewsbury is the royal free-school of Edward VI. erected in 1630, and in which upwards of 300 young gentlemen from all parts of the kingdom are here prepared for the university. The established churches are St. Chad’s, in the patronage of the king; St. Mary’s, the benefice in the gift of the corporation and the head master of the free-school; St. Alkmund’s, in the patronage of the king; St. Julian’s living is with the right hon. earl of Tankerville; Holy Cross and St. Giles’s is in the patronage of lord Berwick. The most ancient religious edifice is the Abbey church, which is in the parish of Holy Cross, and is formed partly from the ruins of the old abbey. There are, besides, chapels for the various sects of dissenters; Wesleyan Methodists, Welsh Methodists, Quakers, and Roman Catholic chapels. In its manufactures the town of Shrewsbury is by no means prominent or noted. An extensive cotton manufactory was carried on from the year 1803 to 1817, by Messrs. Charles and Samuel Hulbert; the buildings have subsequently been converted into fifty dwelling houses, &c. Two very considerable thread manufactures, and the iron foundry of Mr. Hazeldine, are in a flourishing state. The extensive porter brewery of Messrs. Heathcote and Co. has been recently abandoned. The neighbourhood of Shrewsbury is highly respectable; the country beautifully picturesque, studded with gentlemen’s seats, and for fertility not to be surpassed, if equalled, in England. The chief market is on Saturday, but there is another on Wednesday; and every second Wednesday in the month a fair is held, when the produce of the rich and fertile country around is disposed of. Races take place in September annually, and are well attended. The borough, town, and liberties of Shrewsbury, according to the parliamentary census of 1821, contained within the town and liberties 3538 houses, and 22,195 inhabitants.

SHRIEK, *v. n. & n.s.* Dan. *skrieger*; Ital. *scricciolare*. To cry out inarticulately with anguish or horror; to scream: a cry of this kind.

Una, hearing evermore  
His rueful shrieks and groanings, often tore  
Her guiltless garments, and her golden hair,  
For pity of his pain. *Faerie Queen..*

On top whereof ay dwelt the ghastly owl,  
*Shrieking* his baleful note. *Id.*  
It was the owl that *shrieked*, the fatal belman  
Which gives the sternest good night. *Shakespeare.*  
Time has been, my senses would have cooled  
To hear a night *shriek*, and my fell of hair  
Would at a dismal treatise rouse and stir  
As life were in't. *Id. Macbeth.*

In a dreadful dream  
I saw my lord so near destruction,  
Then *shrieked* myself awake. *Derham.*  
Hark! peace!  
At this she *shrieked* aloud; the mournful train  
Echoed her grief. *Dryden's Knight's Tale.*  
The corps of Almon and the rest are shown;  
*Shrieks*, clamours, murmurs, fill the frightened town.  
*Dryden.*

**SHIRIFT, n.s.** Sax. *repent*. Confession made to a priest. A word out of use.

Off with  
Bernardine's nead: I'll give a present *shrift*,  
And will advise him for a better place.  
*Shakspere.*

The duke's commands were absolute;  
Therefore, my lord, address you to your *shrift*,  
And be yourself; for you must die this instant.  
*Roxe.*

**SHRILL, adj. & v.n.** Swed. *skralla*. A word supposed to be made per onomatopœiam, in imitation of the thing expressed, which indeed it images very happily.—Johnson. Sounding with a piercing, tremulous, or vibratory sound: to pierce the air with such sounds.

Hark how the minstrels 'gin to *shril* aloud  
Their merry musick that resounds from far,  
The pipe, the tabor, and the trembling crowd,  
That well agree withouten breach or jar. *Spenser.*

Thy hounds shall make the welkin answer them,  
And fetch *shril* echoes from the hollow earth.  
*Shakspere.*

Look up a height, the *shril* gorged lark so far  
Cannot be seen or heard. *Id. King Lear.*  
A *shrilling* trumpet sounded from on high,  
And unto battle bade themselves address.  
*Shakspere.*

Here no clarion's *shrilling* note  
The muse's green retreat can pierce;  
The grove, from noisy camps remote,  
Is only vocal with my verse.  
*Fenton's Ode to Lord Gower.*

The females round,  
Maids, wives, and matrons, mix a *shrilling* sound.  
*Pope.*  
Up springs the lark, *shril* voiced and loud.  
*Thomson.*

**SHRIMP, n.s.** Teut. *schrumpf*, a wrinkle; Belg. *scrympe*. A small crustaceous vermiculated fish.

It cannot be, this weak and writhled *shrimp*  
Should strike such terror in his enemies. *Shakspere.*

He hath found,  
Within the ground,  
At last, no *shrimp*,  
Whereon to imp  
His jolly club. *Ben Jonson.*  
Of shell fish there are *wrinkles*, *shrimps*, crabs.  
*Carew.*

Hawks and gulls can at a great height see mice on the earth, and *shrimps* in the waters. *Derham.*

**SHRINE, n.s.** Sax. *repin*; Lat. *scrinium*. A case in which something sacred is reposed.

You living powers, inclosed in stately *shrine*  
Of growing trees! you rural gods, that wield  
Your scepters here, if to your ears divine  
A voice may come, which troubled soul doth yield.  
*Sidney.*  
Come offer at my *shrine* and I will help thee.  
*Shakspere.*

They often placed  
Within his sanctuary itself their *shrines*,  
Abominations! and with cursed things  
His holy rites profaned. *Milton.*  
Falling on his knees before her *shrine*,  
He thus implored her power. *Dryden.*  
Lovers are in rapture at the name of their fair  
idol; they lavish out all their incense upon that  
*shrine*, and cannot bear the thought of admitting a  
blemish therein. *Watts.*

**SHRINK, v.n., v.u., & n.s.** Pret. I shrunk, or shrank; part. shrunken. Sax. *repincan*. To contract into less room; shrivel; be drawn together: fall back; express in this way fear of horror: to make to shrink; a contraction or corrugation of this kind.

The children of Israel eat not of the sinew which shrank upon the hollow of the thigh. *Gen. xxxii. 32.*

The wicked shrank for fear of him, and all the workers of iniquity were troubled. *1 Maccabees.*

Leaving the two friends alone I shrank aside to the banqueting-house, where the pictures were. *Sidney.*  
She, weighing the decaying plight,  
And shrunken sinews, of her chosen knight,  
Would not awhile her forward course pursue.  
*Faerie Queene.*

There is no particular object so good but it may have the shew of some difficulty or unpleasant quality annexed to it, in respect whereof the will may shrink and decline it. *Hooker.*

I am a scribbled form, drawn with a pen  
Upon a parchment, and against this fire  
Do I shrink up. *Shakspere. King John.*

Ill-weaved ambition how much art thou shrank!  
When that this body did contain a spirit,  
A kingdom for it was too small a bound:  
But now two paces of the vilest earth  
Is room enough. *Shakspere.*

I'll embrace him with a soldier's arm,  
That he shall shrink under my courtesy. *Id.*  
The sixth age shifts  
Into the lean and slippered pantaloon,  
His youthful hose, well saved, a world too wide  
For his shrank shanks. *Id.*

I have not found that water, by mixture of ashes,  
will shrink or draw into less room.  
*Bacon's Natural History.*

If there were taken out of men's minds vain opinions, it would leave the minds of a number of men poor shrunken things, full of melancholy. *Bacon.*

Many shrink, which at the first would dare,  
And be the foremost men to execute. *Daniel's Civil War.*

This public death, received with such a chear,  
As not a sigh, a look, a shrink bewrays  
The least felt touch of a degenerous fear. *Id.*

If he lessens the revenue he will also shrink the necessity. *Taylor.*

I laugh when those who at the spear are bold  
And vent'rous, if that fail them, shrink and fear  
To endure exile, ignominy, bonds. *Milton.*

The noise increases;  
She comes, and feeble nature now I find  
Shrink back in danger, and forsakes my mind. *Dryden.*

The sky shrank upward with unusual dread,  
And trembling Tyber dived beneath his bed. *Id.*

The gold-fraught vessel, which mad tempests beat,

He sees now vainly make to his retreat ;  
And, when from far the tenth wave doth appear,  
*Shrinks* up silent joy that he's not there. *Id.*

Fall on : behold a noble beast at bay,  
And the vile huntsmen *shrink*. *Id.*

Inuring children to suffer some pain without  
*shrinking*, is a way to gain firmness and courage. *Locke.*

Keep it from coming too long lest it should *shrink*  
the corn in measure. *Mortimer.*

If a man accustom himself to slight those first  
motions to good, or *shrinkings* of his conscience from  
evil, conscience will by degrees grow dull and un-  
concerned. *South's Sermons.*

There is in this a crack which seems a *shrink* or  
contraction in the body since it was first formed.  
*Woodward.*

All fibres have a contractile power, whereby they  
shorten ; as appears if a fibre be cut transversely,  
the ends *shrink*, and make the wound gape. *Arbuthnot.*

Love is a plant of the most tender kind,  
That *shrinks* and shakes with every ruffling wind. *Granville.*

What happier natures *shrink* at with affright,  
The hard inhabitant contends is right. *Pope.*

SHRIVE, *v. a.* { Sax. *repfan*. To hear at  
SHRI'VE, *n. s.* } confession : a shriver is a  
confessor. Not in use.

What, talking with a priest, lord chamberlain ?  
Your honour hath no *shriving* work in hand. *Shakspeare.*

If he had the condition of a saint, and the comple-  
xion of a devil, I had rather he should *shrive* me than  
wive me. *Id.*

The ghostly father now hath done his shrift ;  
When he was made a *shriever* 'twas for shift. *Id.*

*Shrive* but their title, and their monies poise,  
A laird and twenty-pence pronounced with noise,  
When construed but for a plain yeoman go,  
And a good sober two-pence, and well so. *Cleaveland.*

SHRIV'EL, *v. n. & v. a.* Belg. *schrompelen*.  
To contract itself into wrinkles ; to contract into  
wrinkles.

He burns the leaves, the scorching blast invades  
The tender corn, and *shrievels* up the blades. *Dryden.*

When the fiery suns too fiercely play,  
And *shrievelled* herbs on withering stems decay,  
The wary ploughman on the mountain's brow,  
Undams his watery stores. *Id.*

Leaves, if they *shrievel* and fold up, give them  
drink. *Evelyn.*

If she smelled to the freshest nosegay it would  
*shrievel* and wither as it had been blighted. *Arbuthnot.*

SHROPSHIRE, or SALOP, an inland county  
of England, bounded on the north by Denbigh,  
a detached part of Flintshire, and by Cheshire ;  
on the east by Staffordshire ; on the south by  
Worcestershire and Herefordshire ; and on the  
west by Radnorshire, Montgomeryshire, and  
Denbighshire. It is about forty miles in length  
from north to south, thirty-five in breadth from  
east to west, 218 in circumference, and contains  
1341 square miles, and 858,240 acres. Its  
shape is an irregular parallelogram. This county  
contains fifteen hundreds or divisions ; viz. Os-  
westry, Pimhill, Bradford-north, Bradford-south,

and Brimstay, on the north-east side of the Se-  
vern ; the liberty of Shrewsbury, the franchises  
of Wenlock, and the hundred of Stoddesden,  
extending on both banks of that river ; the hun-  
dreds of Ford, Chirbury, Condover, Munslow,  
Overs, Purslow, and the honor of Clun, on the  
south-west side of the Severn. Shropshire is  
partly in the three dioceses of Hereford, Litchfield  
and Coventry, and St. Asaph, and is included  
in the Oxford circuit. There are in this county  
262 churches, of which 229 are parochial. The  
air is, generally, very salubrious. There are  
mines of lead ore, of a good quality on the west-  
ern side of the county, which have been produc-  
tive. In some of these, tools, judged to be Ro-  
man, have been found, a few of which are  
preserved in the library of Shrewsbury free-school.  
Calamine is also met with, and the rock at Pim-  
hill is strongly tinctured with copper. Symptoms  
both of copper and lead appear in the Carding-  
ton hills. Coal of an excellent quality is found  
on the eastern side of the county, particularly in  
the parishes of Wellington, Lilleshall, Wrock-  
wardine, Wombridge, Stirchley, Dawley, Little-  
Wenlock, Madeley, Barrow, Benthall, and Broseley,  
which promise a great and lasting sup-  
ply for the extensive iron manufactories in the  
neighbourhood, for domestic use, and for exporta-  
tion. In this district are the following iron  
works :—On the south side of the Severn are  
Willey, Broseley, Calcot, Benthall, and Bar-  
nett's-Leason ; on the north of that river is  
Madeley Wood, Colebrook-dale, Lightmoor,  
Horsehay Old-Park, Ketley, Snedhill, Donning-  
ton, Queen's-Wood, and Wrockwardine Wood.  
These works employ about 6000 hands, and  
about 260,000 tons of coal are raised annually  
in this district. In the year 1802 there were on  
the different iron and coal works 180 fire  
engines ; and, thirty years preceding, there were  
not more than twenty.

This county is also well supplied with lime,  
and in general the limestone is at no great dis-  
tance from coal ; it is also well supplied with  
building-stone. At Pitchford, near Shrewsbury,  
a mineral pitch is found exuding from a red  
sand stone ; near Jackfield, south of the Severn,  
is carried on a manufacture of coal tar ; and in  
the hundred of North-Bradford, are found sev-  
eral salt springs. The river Severn runs through  
the county, from north-west to south-east, and  
is navigable the whole way, neither lock nor  
weir being upon it from Poolquay, in Montgo-  
meryshire, to the mouth of the Avon near Bris-  
tol, a distance of 155 miles. The other rivers  
are the Camlet, the Teme, the Clun, the Vyrnwy,  
the Perry, the Weaver, the Cund-brook, and  
several smaller streams. Here are several lakes  
or meres, each covering from forty to 116 acres  
of ground. The turnpike roads are kept in to-  
lerable repair, but the private roads are generally  
bad, particularly in the clayey part of the county :  
and accommodation by canal navigation in  
Shropshire is very considerable by means of the  
Shropshire, the Shrewsbury, the Ketley, the Elles-  
mere, and other canals. The Shropshire canal  
may be called a system of water levels and in-  
clined planes ; its general direction is from north  
to south, and it commences in the Severn at

Coalport. It was completed in the year 1792, and is said to have cost only £45,000. The Shrewsbury canal commences in that town, and terminates in the Shropshire canal; it was completed and opened in 1797. The Ellesmere canal is, rather than one, a system of canals, distributed over that extensive and fertile district of country which lies between the banks of the Severn and the Mersey, and between the skirts of North Wales and the borders of Staffordshire; this canal unites the rivers Severn, Mersey, and Dee, and opens a communication by water to the ports of Liverpool and Bristol. There are seventeen market-towns in Shropshire, and nine towns or villages which have fairs but not markets. Various branches of the linen, flannel, and woolen manufactures are carried on near Shrewsbury; and at Coalport and Caughley are manufactures of China ware of great excellence, the blue and white, and the blue, white, and gold China made there is in many instances equal to that from the east. Shropshire, though not remarkable for its agriculture, is in general well cultivated. Its chief products are wheat, coal, iron, limestone, lead, &c., and its manufactures are flannel, broad-cloth, Welsh cottons, mineral tar, cast-iron, &c. This county sends twelve members to parliament, two for the shire; and the boroughs of Shrewsbury, Ludlow, Bridgenorth, Wenlock, and Bishop's Castle, two each. In history, this county has been conspicuous for its military events from the time of the Roman invasion; and during the civil war of Charles I. it was distinguished for its loyalty.

**SHROUD**, *n. s., v. a., & v. n.* Sax. *repnd*. A shelter; a cover; winding sheet; the sails and sail-ropes of a ship: the verb active and verb neuter corresponding.

I turned back to the mast of the ship; there found my sword among some of the *shrouds*. *Sidney*.

By me invested with a veil of clouds,  
And swaddled, as new-born, in sable *shrouds*,  
For these a receptacle I designed. *Sandys*.

That same evening, when all *shrouded* were  
In careless sleep, all without care or fear,  
They fell upon the flock. *Spenser*.

He got himself to Mege, in hope to *shroud* himself  
until such time as the rage of the people was ap-  
peased. *Knolles*.

The tackle of my heart is crackt and burnt;  
And all the *shrouds* wherewith my life should sail  
Are turned to one little hair. *Shakspeare*.

It would warm his spirits,  
To hear from me you had left Antony,  
And put yourself under his *shroud* the universal  
landlord. *Id. Antony and Cleopatra*.

Now the wasted brands do glow;  
Whilst the screech-owl, screaming loud,  
Puts the wretch that lies in woe  
In remembrance of a *shroud*. *Shakspeare*.

One of these trees, with all his young ones, may  
*shroud* four hundred horsemen. *Raleigh*.

Whoever comes to *shroud* me, do not harm  
That subtle wreath of hair about mine arm. *Donee*.

Besides the faults men commit, with this immediate avowed aspect upon their religion, there are others which slyly *shroud* themselves under the skirt of its mantle. *Decay of Piety*.

A weather-beaten vessel holds  
Gladly the port, tho' *shrouds* and tackle torn.  
*Milton*.

## The winds

Blow moist and keen, shattering the graceful locks  
Of these fair spreading trees; which bids us seek  
Some better *shroud*, some better warmth, to cherish  
Our limbs benumbed. *Id. Paradise Lost*.

If your stray attendants be yet lodged  
Or *shroud* within these limits, I shall know  
Ere morrow wake. *Milton*.

So Venus from prevailing Greeks did *shroud*  
The hope of Rome, and saved him in a cloud. *Waller*.

The flaming *shrouds* so dreadful did appear,  
All judged a wreck could no proportion bear. *Dryden*.

Moon, slip behind some cloud · some tempest rise,  
And blow out all the stars that light the skies,  
To *shroud* my shame. *Id.*

**THE SHROUDS** are a range of large ropes extending from the mast-heads to the right and left side of the ship, to support the masts and enable them to carry sail, &c. The shrouds as well as the sails are denominated from the masts to which they belong. Thus they are called the main, fore, and mizen shrouds; the main-top-mast, fore-top-mast, or mizen-top-mast *shrouds*; and the main-top-gallant, fore-top-gallant, or mizen-top-gallant shrouds. The number of shrouds by which a mast is sustained, as well as the size of rope of which they are formed, is always in proportion to the size of the mast and the weight of the sail it is intended to carry. Bow-sprit shrouds are those which support the bowsprit. Bumkin shrouds are those which support the bumkins. Puttock shrouds are shrouds which connect the efforts of the top-mast shrouds to the lower shrouds. Bentick shrouds are additional shrouds to support the marks in heavy gales. Preventer shrouds are similar to bentick shrouds, and are used in bad weather to ease the lower rigging. See **MAST** and **SAIL**.

**SHROVETIDE**, *n. s.* From *shrove*, the *SHROVE-TUESDAY*. *§* preterite of *shrive*. The time of confession; the day before Ash Wednesday or Lent.

At *shrovetide* to shroving. *Tusser*.

**SHROVE-TUESDAY** is the Tuesday after Quinquagesima Sunday, and is so called from the Saxon *shrive*, i. e. to confess. On this day all the people in every parish throughout England, while popery prevailed, were obliged to confess their sins, one by one, to their own parish priests, in their own parish churches; and, that this might be done the more regularly, the great bell in every parish was rung at ten o'clock; and, though the Romish religion is now abolished, the custom of ringing the great bell in several ancient parish churches of England, still remains, and obtains in London the name of pancake-bell; perhaps because, after the confession, it was customary for the confessed to dine on pancakes. Most churches, indeed, have dropt the custom of ringing the bell on Shrove-Tuesday; but the dining on pancakes still continues.

**SHRUB**, *n. s.* *¶* Sax. *repbbe*. A bush; a **SHRUBBY**, *adj.* *¶* small tree; abounding in shrubs.

He came unto a gloomy glade,  
Covered with boughs and *shrubs* from heaven's light. *Faerie Queen*

The humble shrub and bush with frizzled hair.

Milton.

Gentle villager,

What readiest way would bring me to that place?  
—Due west it rises from this shrubby point. *Id.*

Comedy is a representation of common life, in low subjects; and is a kind of juniper, a shrub belonging to the species of cedar. *Dryden.*

Trees generally shoot up in one great stem or body, and then at a good distance from the earth spread into branches; thus gooseberries and currants are shrubs, oaks and cherries are trees. *Locke.*

Plants appearing withered, shrubby, and curled, are the effects of immoderate wet. *Mortimer's Husbandry.*

I've lived

Amidst these woods, gleaning from thorns and shrubs

A wretched sustenance. *Addison.*

On that cloud-piercing hill

Plinlimmon, the goats their shrubby brows

Gnaw pendent. *Philipps.*

All might have been as well brushwood and shrubs. *More.*

**SHRUB** (*frutex*), is a low dwarf tree, or a woody vegetable, of a size less than a tree; and which, instead of one single stem, frequently from the same root puts forth several sets of stems. See **PLANT** and **TREE**. Such are privet, phillyrea, holly, box, honey-suckle, &c. Shrubs and trees put forth in autumn a kind of buttons, or gems, in the axis of the leaves; these buttons are as so many little ova, which, coming to expand by the warmth of the following spring, open into leaves and flowers. By this, together with the height, some distinguish shrubs from suffrutes, or under shrubs, which are low bushes, that do not put forth any of these buttons, as sage, thyme, &c. The two hardiest shrubs we have in this country are the ivy and box; these stand the severity of our hardest winters unhurt, while other shrubs perish, and trees have their solid bodies split and torn to pieces. In the hard winter of 1683 these two shrubs suffered no injury any where; though the yews and holies, which are generally supposed very hardy, were that winter in some places killed, and in others stripped of their leaves, and damaged in their bark. Furze-bushes were found to be somewhat harder than these, but they sometimes perished, at least down to the root. The broom seemed to occupy the next step of hardness beyond these. This lived where the others died, and where even this died the juniper shrubs were sometimes found unhurt. This last is the only shrub that approaches to the hardness of the box and ivy, but even does not quite come up to them; for, while they suffer nothing in whatever manner they are exposed, the juniper, though it bears cold well under the shelter of other trees, yet cannot bear the vicissitudes of heat and cold; insomuch that some juniper shrubs were found half dead and half vigorous; that side which faced the mid-day sun having perished by the successive thawings and freezings of its sap; while that which was not exposed to the vicissitudes of heat, had borne the cold perfectly well. Such shrubs as are not hardy enough to defy the winter, but appear half dead in the spring, may often be recovered by Mr. Evelyn's method of beating their branches with a slender hazel wand, to strike off the with-

ered leaves and buds, and give a free passage to the air, to the internal parts. Where this fails, the method is to cut them down to the quick, and, if no part of the trunk appears in a growing condition, they must be taken off down to the level of the ground.—*Philos. Trans. No. 165.*

**SHUCKFORD** (Samuel), a learned English divine, who was curate of Shelton in Norfolk, prebendary of Canterbury, and chaplain in ordinary to the king. His manners were those of a philosopher, uncorrupted by the manners of the world. He wrote a *History of the World*, sacred and profane, to serve as the introduction to *Prideaux*, in 3 vols. 8vo. It is heavily written, but displays a great deal of erudition. His death, in 1756, prevented him from carrying it down to the year 747 B.C., where *Prideaux* begins. He wrote also a treatise on the Creation and Fall of Man, to serve as a supplement to the preface to his history.

**SHRUG**, *v. n. & v. a.* Belg. *schricken*, to tremble. To express horror or dissatisfaction by motion of the shoulders or whole body; to contradict; draw up.

Like a fearful deer that looks most about when he comes to the best feed, with a *shrugging* kind of tremor through all her principal parts, she gave these words. *Sidney.*

The touch of the cold water made a pretty kind of *shrugging* come over her body, like the twinkling of the fairest among the fixed stars. *Id.*

Be quick, thou wert best

To answer other business; *shruggest* thou malice? *Shakespeare.*

He grins, smacks, *shrugs*, and such an itch endures,

As 'prentices or school-boys, which do know Of some gay sport abroad, yet dare not go. *Donne.*

And yet they ramble not to learn the mode How to be drest, or how to lisp abroad,

To return knowing in the Spanish *shrug*.

*Cleveland.*

He *shrugged* his sturdy back,  
As if he felt his shoulders ake. *Hudibras.*

He *shrugs* his shoulders when you talk of securities. *Addison.*

They grin, they *shrug*,  
They bow, they snail, they scratch, they hug. *Swift.*

**SHIUD'DER**, *v. a.* Belg. *schuddren*. To quake with fear or aversion.

All the other passions fleet to air,  
As doubtful thoughts, and rash embraced despair,  
And *shuddering* fear. *Shakespeare.*

The fright was general; but the female band With horror *shuddering* on a heap they run. *Dryden.*

I love—alas! I *shudder* at the name,  
My blood runs backward, and my faltering tongue Sticks at the sound. *Smith.*

Cæsar will shrink to hear the words thou utterest, And *shudder* in the midst of all his cohquests. *Addison.*

**SHUFFLE**, *v. a. v. n., & n. s.* Sax. *rypeking*, a bustle, tumult. To throw into disorder; to agitate or throw together tumultuously: to play mean tricks; taking *off* and *up*; a shuffle is a trick; artifice; the act of disordering: *shuffling*, with disordered gait.

In that sleep of death, what dreams may come,  
When we have *shuffled* off this mortal coil,  
Must give us pause. *Shakespeare.*

I myself, leaving the fear of heaven on my left hand, and hiding mine honour in my necessity, am fain to *shuffle*. *Id.*

Your life, good master,  
Must *shuffle* for itself. *Id.*

Mincing poetry,  
'Tis like the forced gait of a *shuffling* nag. *Id.*

The motions of *shuffling* of cards, or casting of dice are very light. *Bacon.*

They sent forth their precepts to convert them before a court of commission, and there used to *shuffle* up a summary proceeding by examination, without trial by jury. *Id.*

When the heavens *shuffle* all in one,  
The torrid with the frozen zone,  
Then sybil, thou and I will greet. *Cleavland.*

He *shuffled* up a peace with the cedar, in which the Bumelians were excluded. *Howel.*

I have nought to do with that *shuffling* sect, that doubt eternally and question all things. *Glanville.*

From new *shuffling* and disposition of the component particles of a body, might not nature compose a body dissoluble in water? *Boyle.*

A glimpse of moonshine sheathed with red,  
A *shuffled*, sullen, and uncertain light,  
That dances through the clouds and shuts again. *Dryden.*

I may go *shufflingly*, for I was never before walked in trammels; yet I shall drudge and moil at constancy, till I have worn off the itching in my pace. *Id.*

If any thing hits we take it to ourselves; if it miscarries, we *shuffle* it off to our neighbours. *L'Estrange.*

A sharper both *shuffles* and cuts. *Id.*

The crab advised his companion to give over *shuffling* and doubling, and practice good faith. *Id.*

The gifts of nature are beyond all shams and *shuffles*. *Id.*

We shall in vain, *shuffling* the little money we have from one another's hands, endeavour to prevent our wants; decay of trade will quickly waste all the remainder. *Loche.*

If, when a child is questioned for any thing, he persist to *shuffle* it off with a falsehood, he must be chastised. *Id.*

To these arguments concerning the novelty of the earth, there are some *shuffling* excuses made. *Burnet.*

In most things good and evil lie *shuffled*, and thrust up together in a confused heap: and it is study which must draw them forth and range them. *South.*

If a steward be suffered to run on without bringing him to a reckoning, such a sottish forbearance will teach him to *shuffle*, and strongly tempt him to be a cheat. *Id.*

We sure in vain the cards condemn,  
Ourselves both cut and *shuffled* them. *Prior.*

'Tis not strange that such a one should believe that things were blindly *shuffled* and hurled about in the world; that the elements were at constant strife with each other. *Woodward.*

*Shuffled* and entangled in their race,  
They clasp each other. *Blackmore.*

He has *shuffled* the two ends of the sentence together, and, by taking out the middle, makes it speak just as he would have it. *Atterbury.*

Though he durst not directly break his appointment, he made many a *shuffling* excuse. *Arbuthnot.*

Cards we play  
A round or two; when used, we throw away,

Take a fresh pack; nor is it worth our grieving  
Who cuts or *shuffles* with our dirty leaving. *Granville.*

Is it not a firmer foundation for contentment to believe that all things were at first created, and are continually disposed for the best, than that the whole universe is mere bungling, nothing effected for any purpose, but all ill-favoured cobbled and jumbled together, by the unguided agitation and *rude shuffles* of nature. *Bentley.*

SIHUN, *v. a.* { Sax. *apeunian*. To avoid; SHUN'LESS, *adj.* } decline; endeavour to escape: shunless is unavoidable.

Consider death in itself, and nature teacheth Christ to shun it. *Hooker.*

Alone he entered  
The mortal gate of the city, which he painted  
With *shunless* destiny. *Shakespeare.*

The lark still *shuns* on lofty boughs to build,  
Her humble nest lies silent in the field. *Waller.*

Birds and beasts can fly their foe:  
So chanticleer, who never saw a fox,  
Yet *shunned* him as a sailor *shuns* the rocks. *Dryden.*

Cato will train thee up to great  
And virtuous deeds; do but observe him well,  
Thou'l *shun* misfortunes, or thou'l learn to bear  
them. *Addison.*

SIHUNAMITE, a native of Shunem.  
SHUNHEM, a city of Israel, belonging to the tribe of Issachar, five miles south of Tabor. Josh. xix. 18. A lady of rank in this city was extremely hospitable to the prophet Elisha; in recompence for which, being previously barren, she got a son, who was afterwards restored to life by the prophet. 2 Kings, iv. 8—37.

SIHUR, in ancient geography, a city of Arabia on the north-east side of the Red Sea, which gave name to the adjacent desert, where the angel appeared to Hagar, the mother of Ishmael. Gen. xvi. 7; Exod. xv. 22. It appears to have been seated on the west border of the Amalekites (1 Sam. xv. 7; and xxviii. 8); and is supposed to be the Surratce of Ptolemy.

SHUS, a mass of ruins in the province of Khusistan, in Persia, extending for the space of about twelve miles from the Kerah to the Alzal. Like the ruins of Ctesephon, Babylon, and Cufa, they consist of hillocks of earth and rubbish, covered with broken pieces of brick and colored tile. The two largest and most remarkable of these mounds stand at the distance of about two miles from the Kerah. The first, at the lowest computation, is a mile in circumference, and nearly 100 feet high; the other, though not quite so high, has double the circumference. These mounds bear some resemblance to the pyramids of Babylon, with this difference that, instead of being formed of brick, they consist of clay and pieces of tile, with irregular layers of brick and mortar, five or six feet thick, intended, it should seem, as a kind of prop to the mass. The Arabs, in digging for hidden treasure, often discover here large blocks of marble, covered with hieroglyphics. Major Rennell and Mr. Kinneir seem to fix this site as that of the ancient capital of Susa, instead of Shuster.

SIHUSIAN, or Susa, in ancient geography, a city of Persia, capital of the province of Susiana, or Khusistan. It had a palace, the residence of several of the Persian kings. When it was taken by Alexander the Great he found in it 50,000 talents of gold, besides jewels and plate to an

immense value. It has been long in ruins, and is now called Valdak, or, as others say, Tuster. See *Susa*.

**SHUSTER**, a principal district and city of the province of Khusistan, in Persia. It forms the fairest portion of the ancient Susiana, being watered by four fine rivers, and a number of smaller streams. The oppression of the governor, however, joined to the depredations of the tribes who occupy the fortresses of the neighbouring mountains, have reduced it almost to a desert.

**SHUSTER**, the capital of the province of Khusistan, at the foot of a range of mountains, and on an eminence overlooking the rapid course of the Karoon, is defended on the western side by the river, and on the other sides by an old stone wall. The houses are good, and principally built of stone. The population exceeds 15,000; and there is a considerable manufactory of woollen stuffs. This city has been generally believed to be the ancient Susa. It contains ruins which testify it to have been a place of vast extent, and considerable magnificence. The most remarkable are the castle, built on a small hill at the eastern extremity of the town; the dyke erected by Sapor across the Karoon, with the view of directing the waters into a channel more advantageous to agriculture; and the bridge, of hewn stone, and consisting of thirty-two arches, twenty-eight of which are still entire. Long. 48° 59' E., lat. 32° 0' N.

**SHUT**, *v. a., v. n., n. s., adj.*, } *Pret. I shut;*

**SHUTTER**, *n. s.*, } & *part. 3 part. pass. shut;*  
Sax. *feitan*: Belg. *schutten*. To close; confine; prohibit; bar; exclude (taking *out*); and often taking *up*: to be closed: as a noun substantive the act of shutting; a small door: as an adjective, rid; clear: a shutter is a door or cover.

They went in, male and female of all flesh; and the Lord *shut* him in. *Genesis.*

To a strong tower fled all the men and women, and *shut* it to them, and gat them up to the top. *Judges.*

Thou hast known my soul in adversities; and not *shut me up* into the hand of the enemy. *Psalms.*

Kings shall *shut* their mouths at him. *Isaiah.*

Woe unto you, scribes! for you *shut up* the kingdom of heaven against men. *Matthew.*

Before faith came, we were kept under the law, *shut up* unto the faith which should afterwards be revealed. *Galatians.*

Beat in the reed,  
The juster you drive it to *shut out* the rain. *Tusser.*

Although he was patiently heard as he delivered his embassage, yet, in the *shutting up* of all, he received no more but an insolent answer. *Knolles.*

In such a night  
*To shut me out!* pour on, I will endure. *Shakspeare.*

The king's a-bed;  
He is *shut up* in measureless content. *Id.*

Dangerous rocks *shut up* the passage. *Raleigh.*

We see more exquisitely with one eye *shut* than with both open; for that the spirits visual unite more, and become stronger. *Bacon.*

The wind-gun is charged by the forcible compression of air; the imprisoned air serving, by the help of little falls or *shuts* within, to stop the vents by which it was admitted. *Wilkins.*

She opened, but to *shut*  
Excell'd her power; the gates wide open stood. *Milton.*

Shall that be *shut* to man which to the beast  
Is open? *Id.*

Wisdom at one entrance quite *shut out*. *Id.*  
On various seas not only lost,  
But *shut* from every shore, and barred from every  
coast. *Dryden.*

He, in his walls confined,  
*Shut out* the woes which he too well divined. *Id.*  
To leave you blest, I would be more accurst  
Than death can make me; for death ends our woes,  
And the kind grave *shuts up* the mournful scene. *Id.*

What barbarous customs!  
*Shut up* a desert shore to drowning men,  
And drive us to the cruel seas agen. *Id.*

The wealthy,  
In lofty litters borne, can read and write,  
Or sleep at ease, the *shutters* make it night. *Id.*

We must not pray in one breath to find a thief,  
and in the next to get *shut* of him. *L'Estrange.*

Sometimes the mind fixes itself with so much earnestness on the contemplation of some objects, that it *shuts out* all other thoughts. *Locke.*

There were no *shuts* or stopples made for the animal's ears, that any loud noise might awaken it. *Ray.*

His mother *shut up* half the rooms in the house, in which her husband or son had died. *Addison.*

When the scene of life is *shut up*, the slave will be above his master, if he has acted better. *Collier.*

In a very dark chamber, at a round hole, about one-third part of an inch broad, made in the *shut* of a window, I placed a glass prism. *Newton.*

Lucullus, with a great fleet, *shut up* Mithridates in Pitany. *Arbuthnot.*

**SHUTER** (Edward), an English actor of some fame. His father was a chairman, and Edward was employed as a marker at a billiard table; but discovering some genius for the stage he was engaged at Covent Garden theatre; where he became a performer of some consequence in low comedy. He died in 1776.

**SHUTTLE**, *n. s.*, } Isl. *skutul*; Goth. *skut*

**SHUTTLECOCK**. } *tul*, i. e. shot tool. A weaver's tool for throwing the wft: shuttlecock or cork, one thrown backwards and forwards in a manner similar to the shuttle.

Like *shuttles* through the loom, so swiftly glide  
My father's hours. *Sandys.*

With dice, with cards, with billiards far unfit,  
With *shuttlecocks* misseeming manly wit. *Hubberd's Tale.*

I know life is a *shuttle*. *Shakspeare.*

**THE SHUTTLE**, in the manufactures, is an instrument used by the weavers, which guides the thread it contains, either of woollen, silk, flax, or other matter, so as to make it form the woofs of stuffs, cloths, linens, ribands, &c., by throwing the shuttle alternately from left to right, and from right to left, across between the threads of the warp, which are stretched out lengthwise on the loom. In the middle of the shuttle is a kind of cavity, called the eye or chamber of the shuttle, wherein is enclosed the spool, which is a part of the thread destined for the woof; and this is wound on a little tube of paper, rush, or other matter.

The riband weaver's shuttle is very different from that of most other weavers, though it serves for the same purpose; it is of box, six or seven inches long, one broad and as much deep, shod

with iron at both ends, which terminate in points, and are a little crooked, the one towards the right and the other towards the left, representing the figure of an *s* horizontally placed. See WEAVING.

**SHY,** *adj.* Swed. & Dan. *sky*; Ital. *schifo*. Reserved; not familiar; not free of behaviour; suspicious.

A *shy* fellow was the duke; and, I believe, I know the cause of his withdrawing.

*Shakspeare. Measure for Measure.*

Princes are, by wisdom of state, somewhat *shy* of their successors; and there may be supposed in queens regnant a little proportion of tenderness that way more than in kings. *Wotton.*

We grant, although he had much wit,  
He was very *shy* of using it,

As being loath to wear it out,

And therefore bore it not about. *Hudibras.*

We are not *shy* of assent to celestial informations, because they were hid from ages. *Glanville.*

I am very *shy* of employing corrosive liquors in the preparation of medicines. *Boyle.*

She is represented in such a *shy* retiring posture, and covers her bosom with one of her hands. *Addison's Guardian.*

The bruise imposthumated, and turned to a stinking ulcer, which made every body *shy* to come near her. *Arbuthnot.*

What makes you so *shy*, my good friend? There's nobody loves you better than I. *Id.*

But when we come to seize the inviting prey,  
Like a *shy* ghost it vanishes away. *Norris.*

The horses of the army, having been daily led before me, were no longer *shy*, but would come up to my very feet without starting. *Swift.*

I know you *shy* to be obliged,  
And still more loth to be obliged by me. *Southern.*

**SIAM, or SYAMA, BLACK,** a kingdom of India beyond the Ganges, situated principally between lat. 10° and 15° N. To the north its boundaries are unknown; on the south it has the sea and the Malay peninsula; on the east are the countries now comprehended in the Cochin-Chinese empire; and the west the dominions of the Birmans. Before its extent was so much contracted, by the victories of the latter nation, its length was estimated at 360 miles by 300 the average breadth; but these must have been the extreme dimensions, and liable to annual fluctuation. The proper seat of the Thay, or Siamese race, is along the banks of the great river Menam; but their sovereignty and language have, in prosperous periods, had a much wider range.

Siam may be described as a vast plain intersected by the Menam, on the banks of which all the principal towns are situated, and separated from the Burman and Cochin-Chinese empires by two long ridges of mountains. In addition to this it possesses a great extent of sea-coast along the Gulf of Siam, which is, however, but thinly inhabited, the Siamese having an aversion to settle on the margin of the sea, probably through dread of the Malay pirates. Like the provinces of Bengal it is subject to annual inundations, which begin in July, and when at their height overflow the country, except the artificial sites of the villages and the trees. The stalks of rice rise with the flood, and keep on the surface until it subsides. Near the shores of the Menam, the only part of the country to which Europeans

have recently had access, the land is flat and the soil alluvial, on which account, after the rainy season is over, many extensive morasses remain, and render the climate extremely pestilential to European constitutions, causing fluxes, dysenteries, and acute fevers. In the more elevated tracts, remote from the river, the country is parched and dried up. To the overflowing of the river the land in its vicinity owes its fertility, and is very productive of rice and other plants that require a redundant supply of moisture. Wheat is also raised on the higher grounds, but in very small quantities; the Europeans formerly settled here, having been obliged to import what they required for their own use. Besides these the soil is capable of raising all the richest of the productions for which Bengal is celebrated; but little comparatively is cultivated, owing to the miserable government by which the peasantry are oppressed and harassed. Here are many medicinal plants and gums; also oil of jessamine, benzoin, lack, crystal, emery, antimony, cotton, wood, oil, wax, lac, varnish, wild cinnamon, cassia buds, and iron wood, the last of which is much used by the natives, Malays, and Chinese, as anchors for their vessels. Betel nut is produced and exported in considerable quantities by the Portuguese ships and Chinese junks. Most of the fruits of Hindostan thrive in Siam, and there are in addition the durian and mangosteen.

The domesticated quadrupeds are horses, cows, buffaloes, sheep, goats, and elephants; and, in the jungles, tigers, rhinoceroses, deer, and hares, are found. There is great abundance of common poultry; besides which there are peacocks, pigeons, partridges, storks, parrots, and other birds. The cows give but little milk, which is mostly supplied by the female buffaloes, but the natives have not the art of converting it into butter. The horses are of a very inferior race, the best being imported from Batavia. The insects and vermin are the same as in other parts of India, and the sea and rivers yield excellent fish, upon which a great proportion of the lower classes subsist. In addition to these there are fine lobsters, turtle of a good quality, oysters, and the mango fish, so much esteemed in Calcutta. The mountains in the interior yield diamonds but little inferior to those of Hindostan, sapphires, rubies, and agates. Among the mountains and rivulets gold is also collected, and probably in considerable quantities, as much is used in Siam for the gilding of idols, temples, and other public edifices, and there is none known to be imported by sea. In the interior, iron, tin, lead, and copper, are procured—the latter of a good quality, but scarce.

The Siamese have never been in the habit of carrying on foreign commerce in their own vessels, the tonnage being principally supplied by the Portuguese, Chinese, and Cochin-Chinese, comparatively little intercourse subsisting with Hindostan. The Menam, by which ships enter, discharges itself into the Gulf of Siam; but has a bar at its mouth, to cross which the assistance of a pilot is required. The southerly monsoon is the best season for ships to visit Siam, and the northerly for returning to Hindostan through the

Straits of Malacca. Bancok, or Bancasay, situated on the river near the bay, is the principal place of trade, and the king is the chief merchant. No private merchant here dares to trade in tin, tutenague, elephants' teeth, lead, or sapan wood, without permission from his majesty, who monopolises these articles, and receives them from his subjects in lieu of revenue. The excellent sauce, named ballachong, is best procured here, where it is composed of dried shrimps, pepper, salt, and sea-weed, beaten together to the consistence of a tough paste, and then packed in jars for sale. Vessels bound for Siam, by taking out a fresh port clearance at Malacca, escape a number of charges. Unlike the Malays, although so near them, the Siamese have the utmost aversion to quit their own homes, and have consequently made no maritime excursions, and planted no colonies.

The constitution of the Siam government is despotic, and there are no hereditary nobility. All the inhabitants are liable to be called on for military services, and very few standing troops are maintained. Their arms are matchlocks, always in a bad condition, spears, and creeses. They make their own gunpowder, but it is of so very inferior quality that considerable quantities are imported. Their fortifications are stockades of trees and posts encircled by a ditch, but the real defence of Siam consists in the natural obstacles presented to invaders by the jungles, morasses, and numerous branches of rivers; to which may be added the unhealthiness of the climate, which soon thins the ranks of an army. As in the Malay states, the heir apparent to the throne possesses a legitimate authority almost equal to that of the reigning monarch. A small part of the taxes are levied in money, but much the greater part of the revenue is received in kind, and realized by sale to foreign traders. In 1750 the population was computed, by the French missionaries, at 1,900,000, but apparently without any proper foundation for the estimate.

The Siamese nation, properly so called, consists of two races, the Thay, and the Thay Jhay. Of these the latter are the most ancient, and were formerly famous for their learning and the power of their empire, of which many monuments are said still to exist. The Thay Jhay inhabit the country between the Menam and the Mekan, or river of Cambodia; but the Thay, for the most part, inhabit on the west of the Menam or Siam River, or between that and the frontiers of the Tinnaw (Tennasserim), Mon (Pegu), and Barma (Birman) nations. By the Birmans they are denominated Syan, whence the Portuguese seem to have borrowed their Siam and Siaom, and from whom the other European nations have adopted the term. The former capital of Siam was named Yudia, or Yoodra; from which circumstance the Siamese are frequently, by the Birmans, called Yoodras. In their manners and customs they greatly resemble the Birmans and Peguers. The females here are obliged to drudge in all the laborious employments; by them the woods are cleared, the earth cultivated, and the harvest reaped. Both males and females take as much pains to blacken their teeth as the Europeans do to preserve them white. The men

eradicate their beards, but allow their nails to lengthen like the Chinese. They are extremely gross feeders, in which they resemble the other nations east of the Ganges. Among their edibles are rats, lizards, grasshoppers, and other insects, disgusting to the natives of Hindostan. Their houses are raised on posts, and are ascended to by a ladder on the outside. Like all the semi-barbarous nations in this quarter of the globe, their artists in gold are remarkably expert, and their filigree work singularly beautiful. They excel also in beating out gold leaf, of which a great deal is expended in adorning their temples and idols. The Chinese practitioners, who are their chief physicians, have long been accustomed to the use of the bath in fevers and other distempers, and if they are not successful in the cure they receive no pay. The Siamese generally are so addicted to singing, on all occasions, that the missionaries found the best way of imprinting their precepts on the memories of this people was to form them into short Latin songs adapted to popular tunes. They have a variety of musical instruments, but all disagreeable to a European ear; of the European instruments they prefer the organ, on account of the loudness of its melody, and were much attracted by it to the Roman Catholic churches. Time is still measured by vessels having a small hole perforated and placed in a tub of water, the construction of clocks being beyond their mechanical powers.

The Thay language is that which is used by the Siamese, who in their own tongue assume this name as their national appellation. It appears to be in a great measure original, and is purely monosyllabic, and more powerfully accented than any of the other Indo-Chinese languages. The Siamese contains a great variety of compositions; their poems and songs are very numerous, as are their Cheritras, or historical and mythological fables. Many of the Siamese princes have been celebrated for their poetic powers, and several of their historical and moral compositions are still preserved. The Siamese Cheritras, or romantic fictions, are very numerous; and the personages introduced, with the exception of Rama, and the heroes of the Ramayuna, have seldom much similarity to those of the Brahmins. On the eastern coast of the peninsula the Siamese language extends as far south as Patani, where it meets the Malay dialect. Besides the natives there are many colonies of foreigners established in Siam, particularly Chinese, Portuguese, Malays, Macassars, and Buggesses. At an early period the English, Dutch, and French, had also settlements, but none of them continued permanent. The commerce of the country is, at present, almost entirely conducted by the Chinese and native Portuguese; the latter of whom have now scarcely any thing of the European but the name.

The national religion of Siam is that of Buddha, or Sammonacodom, and entirely resembles that of the Birmans described under the article Ava, but all sects are tolerated. The doctrines of the Siamese faith are singularly severe, and admit of no indulgencies whatever; but the bulk of the nation are persuaded that rigid virtue and perfection are not prescribed to them but only to

their priests; and trust to their mortifications and austerities as expiations for the faults of the whole. As among the Hindoos, suicide is regarded favorably, but is by no means so generally practised. The first French missionaries reached Siam in A. D. 1662, after a most painful and arduous journey over land to the Bay of Bengal, where they embarked; but prior to this the Christian religion had made some progress so early as 1621, through the medium of the Portuguese. The French mission was subsequently prosecuted with great zeal for more than a century, and was occasionally assisted by political emergencies, but no essential progress was ever made towards effecting the benevolent intentions of the missionaries.

The Siamese histories of the Thay dynasty are said to detail, with much minuteness and great exaggeration, the events that have occurred in Siam, and the adjacent states and countries, during the last 1000 years, and also the events of 400 years prior to that period, from the building of the city Maha Nakon, but with less precision. The records of the other dynasty, the Thay Jhay, are supposed still to exist. Notwithstanding these documents, the Siamese nation was wholly unknown in Europe, until the discovery of the route to India by the Cape of Good Hope. The first traces of their authentic history begin about A. D. 1550, and were acquired through the medium of the Portuguese, who frequently acted as auxiliaries to the factions contending for the government. From the records of the East India Company it appears that, in 1684, they sustained considerable losses by a Mr. Constantine Faulcon (a Cephalonian Greek) one of their inferior servants, who ran away in their debt, and obtained possession of their property, by making presents to the king of Siam, whose prime minister he afterwards became. In 1684 ambassadors were sent from Siam to Louis XIV. on board of an English vessel; and, in consequence, Messrs. Ceberet and La Loubere were despatched as ambassadors to Siam, where they arrived the 27th of September, 1787, and immediately solicited the king to embrace the Roman Catholic religion. In this request they were the more urgent from learning that an envoy had arrived from the court of Persia to convert him to the Mahometan faith. The Siamese monarch declined the conversion proposed, but entered into a strict alliance with the French, whom he allowed to garrison Bangkok and Mergui, the two most important havens in his dominions. This intimacy was, however, of short duration; as in 1688, by a sudden revolution, the king was dethroned and murdered, Faulcon executed, and the French expelled. From this period Siam experienced much internal discord, and many sanguinary massacres; but remained exempt from external annoyance until 1754, when, in consequence of the conquest of Pegu, the Birman dominions came in contact with those of Siam. War immediately ensued, and has continued, with the exception of a few short intervals, ever since; and, greatly to the detriment of the Siamese, who were repeatedly defeated with great slaughter, had their capital sacked in 1766, and lost all their maritime possessions on

the Bay of Bengal, and along the west coast of the Malay peninsula. But although, by the chance of war, the Siamese have been subjected to many vicissitudes, and brought frequently to the brink of destruction, they have never ceased to exist as a distinct and independent nation, for which they are probably indebted to the domestic dissensions of the Birmans, and the natural strength of their country.

**SIAM**, a city in the kingdom of Siam, of which it is the capital, (lat. 14° 5' N. long. 100° 25' E.) situated on an island formed by the Menam, or Siam River, intersected by several canals, and has several other islands adjacent. Although of great extent it is now very thinly populated. The palace of the king is a large irregular confused building, covering a great space of ground, and surrounded by high walls, which include also several temples. In this town there are many casts of statues and cannon, the latter of a prodigious calibre, which indicate a greater perfection in the arts at some former era than is now found among the Siamese. In 1766 this place was captured by the Birmans after a long blockade. By the Birman town of Siam is frequently named Dwarawuddy, but by the natives it is called See-y-thaa. Most places of consequence are here distinguished by two appellations, one in the vulgar tongue, and the other in the Pali or learned language.

**STAMPA** (Champa), a province in the Cochinchinese empire, situated principally between lat. 10° and 11° N. To the north its boundaries are undefined; on the south it has the sea of China; on the east Cochinchina and the sea; and on the west Cambodia. It is a small mountainous territory, separated into three divisions.

**SIANG-YANG**, a city of China, of the second rank, in the province of Quang-si, 1045 miles S. S. W. of Pekin. Long. 111° 39' E. lat. 32° 5' N.

**SIBBALD** (Sir Robert), M. D., a celebrated and learned Scottish physician, writer, and antiquarian, born in Fife-shire in 1643. He was educated at the university of St. Andrew's, where he took his degrees, and afterwards travelled into France and Italy. On his return to Scotland he projected the plan for establishing the Royal College of Physicians. He likewise planned and commenced the Botanical Garden at Edinburgh, which has since been so highly improved. His medical practice was very extensive; yet he spent much time on the study of Scottish antiquities. He wrote The Natural History of Scotland, and The History of Fife-shire. He died in 1750.

**SIBBALDIA**, in botany, a genus of the pentagynia order, and pentandria class of plants; natural order thirty-fifth, senticose: CAL. divided into ten segments; the petals are five, and are inserted into the calyx: STYLES attached to the side of the germens: SEEDS five. There are three species:—1. S. altaica; 2. S. erecta; and, 3. S. procumbens, the reclining sibbaldia, is a native of North Britain, having never been discovered in the southern parts of the island. It grows on Ben-Lomond and Ben-Mor, within a mile of the summit. It is distinguished by a procumbent or trailing stem; by three leaves growing on the

top of a small foot-stalk, which are trifid at the extremity, and somewhat hairy. The flowers are yellow, and blossom in July or August.

SIBBENS, or SIVVENS, in medicine, an infectious disease of a chronic nature, somewhat resembling syphilis, prevalent in the western parts of Scotland. It is said to be so denominated from the appearance of a fungous exuberance from some of the cutaneous sores, not unlike a raspberry; the word sibben, or siven, being the Highland appellation for a wild raspberry. Whence it has also been sometimes confounded with the yaws, a disease of tropical climates, brought from Africa, and so denominated by the negroes from the same fruit. The disease is commonly communicated by the direct conveyance of the infectious matter by some species of contact, and generally through the medium of the mouth. The extensive propagation of the disease in Scotland seems ascribable to the uncleanly practices which prevailed among the lower classes of the people, such as using the same utensils in eating and drinking, passing the same pipe from mouth to mouth, sleeping in the same bed, using the same towel, &c.; the most effectual check, therefore, to the progress of it, was to be expected from a system of prevention, which consisted in adopting a more decent and cleanly proceeding. Dr. Gilchrist recommended the persons employed in harvest-work each to carry with him a dish, cup, knife, spoon, and a cloth to wipe them with, that all the party might not eat with the same utensils, and transfer contagion. He also strongly urged the impropriety of admitting that common familiarity which every one claims by custom to kiss and fondle children, and especially to deny it to strangers, and those of low rank. By attending to these and similar means of prevention the disease appears to have been materially controlled.

SIBERIA, sometimes denominated Asiatic Russia, is that part of the immense territory of the Russian empire which lies to the east of the Ural chain, by which the empire is intersected from north to south. It has already received our attention under the article RUSSIA, which see. It may be described, distinctly, as a flat tract of land of considerable extent, declining imperceptibly towards the Frozen Ocean, and by equally gentle gradations rising towards the south; where at last it forms a great chain, constituting the boundary of Russia on the side of China. The greatest breadth from the cape of Cevero Vostochnoi, called in some maps Tainara, to the Altai mountains south of the sea of Baikal, may be estimated at 28°, or 1680 geographical miles. In British miles the length, at a gross computation, may be stated at 5350, and the breadth at 1960, which extent exceeds that of Europe. The vast country of Siberia, says Mr. Tooke, contains, by calculation, upwards of 10,500,000 of square versts, comprehending within it several kingdoms, taken by roving Kozaks (Cossacks) on their own account, and then surrendered to the czar, who completed the conquest.

One of the chief sources of Russian wealth has long been the mineral treasures of Siberia. These were first explored by order of Peter the Great, and have since been worked with much

advantage. The eastern side of the Uralian mountain is the chief mining district in the Asiatic part of the empire; and the metals obtained in that region are mostly gold, copper, and iron. Valuable gold mines are worked at Catherinburg in lat. 57°, and those of Berezoff, in the same vicinity, are esteemed the richest in the Russian dominions. Metallic veins extend in various directions from this centre, and there are numerous iron and copper foundries in the same neighbourhood. The silver mines of Kolyvan, in the Altai range, are near the place where the Oby enters the southern confines of Siberia, and were first opened in 1745. They have proved very advantageous. The mines at Nertschink, in the Daourian range, were discovered in 1704, but they are less productive. The Altai range contains mines of lead and copper, with which gold and silver are sometimes mixed. But the most valuable of the Russian mines are those of iron, which are principally in the eastern branches of the Ural mountains. The inferior metals are less plentiful. Antimony is obtained in the mines of Nertschink, and zinc is found both there and in the Altaian chain, where nickel, cobalt, and bismuth, have been obtained in small quantities. Quicksilver has also been discovered in the eastern part of Siberia. Coal is scarcely known; but salt, sulphur, alum, nitre, vitriol, and natron, abound. A variety of gems and precious stones likewise exist in the mountains. The topaz is found in the Daourian hills, and the beryl is met with both there and near Catherinburg. Red garnets are numerous near the sea of Baikal; and others of a pale yellow have also been obtained in the same region. The onyx, agate, jasper, and lapis lazuli, are also found in the distant mountains of Siberia; while many parts of the Uralian chain afford fine marble, and others supply granite and porphyry. An ample field for mineralogical research, however, is still open in this portion of the globe.

The mineral waters of Siberia have been little explored. The principal that are known are the warm baths near the Caucasan mountains, particularly at Terek, and at Tiflis, the capital of Georgia, with those in the vicinity of the sea of Baikal, and some others in the most eastern part of the same mountains. There is also a fetid sulphureous spring at Sarepta, a few versts from Astracan, and others in Siberia. Kamtschatka likewise contains several mineral springs. Those near the southern extremity are of a very hot and penetrating quality, and emit clouds of smoke. Chalybeate springs are found among the iron mines in the vicinity of Catherinburg.

The whole of northern Asia was first known by the name of Sibir, or Siberia; but the appellation is gradually passing into disuse. When the Monguls established a kingdom in these regions, the first residence of the princes was on the river Tura, on the site of the town now called Tiumen, about 180 miles south-west of Tobolsk; but they afterwards removed to the eastern shore of the Irtisch, and there founded the city of Isker near Tobolsk. This new residence was also called Sibir, of unknown etymology, and the name of the city passed to the Mongul principality. Although this is doubted by Coxe,

Pallus says that the ruins of Sibir are still visible twenty-three versts from Tobolsk, and that it gave name to the rivulet Sibirka, and the whole of Siberia. When the Russians began the conquest of the country they were unapprised of its extent; and the name of this western province was gradually diffused over the half of Asia. The principality established by the Monguls under Sheibum in 1242 in the western part of Siberia, around Tobolsk and the river Tura, from which it has sometimes been called Tura, has been already mentioned. The actual conquest of Siberia commenced in the reign of Ivan Vassillievitch II., who ascended the Russian throne in 1534. Induced by the prospect of establishing a traffic for Siberian furs, he determined to undertake the conquest of the country, and in 1558 added to his titles that of lord of Sibir, or Siberia. Yarmak, a Cossack chief, being driven by the Russian conquests in the south to take refuge, with 6000 or 7000 of his followers, near the river Kama, afterwards marched down the Ural chain, defeated the Tartar Kutchun, khan of Sibir, and pressed forwards to the Tobol and the Irtisch, and also to the Oby, and, in this astonishing expedition, subjugated Tartars, Vogules, and Ostiaks. Finding it impossible to maintain and complete his conquests with his small army, he surrendered them in 1581, by a formal capitulation, to the czar Ivan Vassillievitch, who nobly rewarded his magnanimity and exertions. This conqueror of Siberia, however, did not live to witness the full accomplishment of this enterprise. He died in 1584; and after his death the discovery and conquests which he had made were prosecuted by regiments of Donskoi Cossacks, sent thither for that purpose, as far as the Eastern Ocean and the mountains of China; and in the middle of the seventeenth century this whole part of the world had become a Russian province. A person, whose name was Cyprian, was appointed first archbishop of Sibir in 1621, and at Tobolsk, where he resided, he drew up a narrative of the conquest. About the middle of the seventeenth century the Russians had extended east as far as the river Amur; but Kamtschatka was not finally reduced till the year 1711. Behring and other navigators afterwards proceeded to discover the other extreme parts of Asia. In his first voyage in 1728 Behring coasted the eastern shore of Siberia as high as lat.  $67^{\circ} 18'$ , but his important discoveries were made during his voyage of 1741. The Aleutian Isles were visited in 1745; and in the reign of the empress Catharine II. other important discoveries followed, which were completed by captain Cook. In the south the Mongul kingdom of Kazan was subdued in 1552, and that of Astrakhan in 1554, and the Russian monarchy extended to the Caspian Sea. In 1727, after previous conflicts, the Russian limits were continued westward from the source of the Argoon to the mountain Sabyntaban, near the conflux of two rivers with the Yenisei; the boundary being thus ascertained between the Russians and the Monguls subject to China. The trade with China has been conducted at Zuruchaitu, on the river Argoon, lat.  $50^{\circ}$  N., long.  $337^{\circ}$  E., and at Kiachta, about ninety miles south of the sea of Baikal, lat.  $51^{\circ}$  N., long.  $106^{\circ}$

E. This boundary between two states is the most extensive on the globe, reaching from about  $65^{\circ}$  to  $145^{\circ}$  of long., or  $80^{\circ}$  (lat.  $50^{\circ}$ ); yielding, by the allowance of thirty-nine geographical miles to  $1^{\circ}$ , 3120 miles. See RUSSIA.

SIBILATION, n. s. Lat. *sibilo*. A hissing sound.

Metals, quenched in water, give a *sibilation* or hissing sound. *Bacon's Natural History.*

A pipe, a little moistened on the inside, maketh a more solemn sound than if the pipe were dry; but yet with a sweet degree of *sibilation* or purling. *Id.*

SIBIR, an ancient city of Asia, and the capital of Siberia, to which it gave name. It was seated on the right bank of the Irtisch, about eighteen versts from Tobolsk, and was the residence of the ancient sovereigns of Siberia. The ruins of a rampart are all that remain of this ancient seat of Siberian monarchs.

SIBIRIA, the ancient name of Siberia, from Sibir, its capital; still used by authors who write in Latin respecting that country or its products; as *Ovis Sibiricus*, &c., Pallas.

SIBRECHTS (John), an eminent Flemish painter, born at Antwerp, in 1625. He came over to London, where he was much employed by the nobility. He excelled in painting landscapes with cattle. He died in 1703.

SIBTHORP (John), a late celebrated botanist, was the youngest son of Dr. Humphrey Sibthorp, professor of botany at Oxford, where the subject of this article was born, October 28th, 1738. He received the first rudiments of his education at Magdalen school, whence he was removed to that of Lincoln. In due time he entered Lincoln College, Oxford; but upon obtaining the Radcliffe travelling fellowship, became a member of University College. Being intended for the medical profession, he was sent to Edinburgh; but he took the degree of doctor of physic in his own university. The taste he had early imbibed for natural history, especially botany, was indulged in a tour to the Highlands of Scotland: after his return from which he visited France and Switzerland, spending a considerable time at Montpelier, where he formed an intimacy with Broussonet, collected many plants of that country, and communicated to the Academie des Sciences of Montpelier, of which he became a member, an account of his numerous botanical discoveries. The death of an elder brother of his father, by which a considerable estate devolved on the latter, occasioned Dr. J. Sibthorp to return to England in 1783, when, on his father's resignation, he was appointed to the botanical professorship.

Dr. Sibthorp, having passed a portion of the year 1784 at Gottingen, projected there his first tour to Greece; the botanical investigation of which celebrated country, and especially the determination of the plants mentioned by its classical authors, had, for some time past, become his leading object. He first visited the principal seats of learning in Germany, and cultivated the friendship of the two professors Jacquin, father and son; studied with peculiar care the celebrated manuscript of Dioscorides, which has so long been preserved in the imperial libra-

ry of Vienna; and procured a most excellent draughtsman, Mr. Ferdinand Bauer, to be the companion of his expedition. On the 6th of March, 1786, they set out together from Vienna, and passed through Carniola to Trieste, Venice, Bologna, Florence, Rome, and Naples, keeping an exact record of their botanical observations. After viewing the celebrated environs of Naples, they sailed thence early in May, and touching at Messina, as well as at the Isle of Milo, proceeded to Crete. Having narrowly escaped shipwreck, in returning to Milo by one of the country vessels, Dr. Sibthorp and his companion touched successively at several islands of the Archipelago, visited Athens, and remained for a while at Smyrna: they traced the steps of Sheridan and Hasselquist, proceeded by land to Bursa, climbed the Bithynian Olympus, and at length reached Constantinople, where they spent the ensuing winter, in the course of which Dr. Sibthorp devoted himself to the study of modern Greek. In a botanical excursion to Belgrad, on the 17th of February 1787, and another to Bujuckderi, March 5th, the plants found in flower were almost entirely the same as are met with, at the same season, in England. Dr. Sibthorp's residence at Constantinople, or in the neighbouring Isle of Karki, proved very favorable to his investigations of the fishes and birds of those regions.

Having on the 14th of March, 1787, joined company with captain Emery and Mr. Hawkins, Dr. Sibthorp sailed from Constantinople in a Venetian merchant ship for Cyprus, taking the islands of Mytilene, Scio, Cos, and Rhodes, and touching at the coast of Asia Minor, in their way. A stay of five weeks at Cyprus enabled Dr. Sibthorp to draw up a Fauna and Flora of that island. The former consists of eighteen mammalia, eighty-five birds, nineteen amphibia, and 100 fishes; the latter comprehends 616 species of plants. The particular stations, domestic and medical uses, and reputed qualities of these last, are amply recorded; and the vernacular names of the animals, as well as of the economical plants, are subjoined. The same method is pursued, in a subsequent part of this journal, respecting the plants and animals of Greece, with every thing that could be collected relative to the medicine, agriculture, and domestic economy of that country and the circumjacent isles. The illustration of the writings of Dioscorides, in particular, was Dr. Sibthorp's chief object. The names and reputed virtues of several plants, recorded by that ancient writer, and still traditionally retained by the Athenian shepherds, served occasionally to elucidate, or to confirm their synonymy. The first sketch of the Flora Graeca comprises about 850 plants. 'This,' says the author, 'may be considered as containing only the plants observed by me in the environs of Athens, on the snowy heights of the Grecian Alp Parnassus, on the steep precipices of Delphini, the empurpled mountain of Hymettus, the Pentelic, the lower hills about the Piræus, the olive grounds about Athens, and the fertile plains of Bœotia. The future botanist, who shall examine this country with more leisure, and at a more favorable season of the year, before the

summer sun has scorched up the spring plants, may make a considerable addition to this list. My intention was to have travelled by land through Greece: but the disturbed state of this country, the eve of a Russian war, the rebellion of its bashaws, and the plague at Larissa, rendered my project impracticable.' Of the mammalia of Greece, thirty-seven are enumerated, with their modern names, twenty-five reptiles, and eighty-two birds. All these catalogues were greatly augmented by subsequent observations, insomuch that the number of species, collected from an investigation of all Dr. Sibthorp's manuscripts and specimens for the materials of the *Prodromus Floræ Graecæ*, amounts to about 3000.

We cannot particularly trace our traveller's steps through Greece, or the various islands of the Archipelago. His health, which suffered from the confinement of a ship, and the heat of the weather, was restored at Athens, where he arrived on the 19th of June, 1787. Thence he prosecuted his journeys in various directions, and with various successes: the ascent of Mount Delphis, or Delphi, in Negropout, in a storm of wind and rain, on the 3d of August, was one of his most laborious, if not perilous adventures; but his botanical harvest was abundant. With regard to scenery, Mount Athos, which he visited a week after, seems to have made most impression on his mind. This spot also greatly enriched his collection of rare plants. Hence he proceeded to Thessalonica, Corinth, and Patras, at which last place he embarked with Mr. Bauer, on board an English vessel, for Bristol, on the 24th of September. After a tedious and stormy voyage, they arrived in England the first week in December. He became a fellow of the Royal Society in 1789, and was among the first members of the Linnaean Society, founded in 1788.

On the 20th of March, 1794, Dr. Sibthorp set out on his second tour to Greece. He travelled to Constantinople in the train of Mr. Liston, ambassador to the Porte, and was attended by Francis Borone, as a botanical assistant. They reached Constantinople on the 12th of May, not without Dr. Sibthorp's having suffered much from the fatigues of the journey, which had brought on a bilious fever. He soon recovered his health at Constantinople, where he was joined by his friend Mr. Hawkins from Crete. Towards the end of August they made an excursion into Bithynia, and climbed to the summit of Olympus, whence they brought a fresh botanical harvest. Dr. Sibthorp discovered at Fanar an aged Greek botanist, Dr. Dimitri Argyrami, who had known the Danish traveller Forskall, and who was possessed of some works of Linnaeus. Recovered health caused Dr. Sibthorp to set out with alacrity on his voyage to Greece, on the 9th of September. Passing down the Hellespont, on the 13th, with a light but favorable breeze, they anchored at Koum Cale, in the Troad, spent two days in examining the plains of Troy, and then proceeded to the Isles of Imbros and Lemnos. On the 25th they anchored at Mount Athos, and passed ten days in examining some of the convents and hermitages, with the romantic scenery, and botanical rarities, of

that singular spot, on all which Dr. Sibthorp descants at length, with great delight, in his journal. Their departure was for some time prevented, by a few Barbary pirates hovering on the coast, whom these monks, unlike the priests of the Athenian Bacchus, were not potent or valiant enough to defeat, or to turn into dolphins. Our voyagers sailed on the 5th of October, and on the 7th landed at Skiatho. Hence, on the 11th, they proceeded down the strait of Negropont, and on the 13th passed under the bridge of five arches which connects that island with the main land of Greece. On the 15th, at noon, they entered the harbour of the Pyræus, and proceeded to Athens, where the four succeeding weeks were employed in collecting information relative to the present state of the government, the manufactures, and the domestic economy of that celebrated spot. Here Dr. Sibthorp lost his assistant Borone, who perished by an accidental fall from a window, in his sleep, on or about the 20th of October. November 16th Dr. Sibthorp and Mr Hawkins left Athens by the ancient Eleusinian way, where the classical streams of the Cephissus, the heights of Helicon and Parnassus lay before them. They proceeded to Patras and to Zante, where they arrived in the middle of December, enriched with a large collection of seeds, the only botanical tribute that could, at this season, be collected from those famous mountains. An apothecary at Zante furnished Dr. Sibthorp with an ample and splendid herbarium, of the plants of that island, with their modern Greek names; nor did the winter pass unprofitably or unpleasantly in this sequestered spot; where neither agreeable society, nor copious information relative to our learned travellers' various objects, was wanting. The season was sufficiently favorable, in the middle of February 1795, to allow them to visit the Morea, of which peninsula they made the complete circuit in somewhat more than two months. The violet and primrose welcomed them in the plains of Arcadia; and the Narcissus tazetta, which Dr. Sibthorp was disposed to think the true poetic Narcissus, decorated in profusion the banks of the Alpheus. The barbarian horde, under whose escort they were obliged to travel, had taste enough to collect nosegays of these flowers. The oaks of the Arcadian mountains presented them with the true ancient miseltoe, *loranthus europæus*, which still serves to make birdlime; whilst our mistletoe, *viscum album*, in Greece grows only on the silver fir. The jay, still called by its ancient name *κοσσα*, which is generally taken for the magpie, was screaming among these oaks: and the water ouzel, *sturnus cinclus*, flying along the rocky sides of the alpine rivulets of Arcadia, presented itself to Dr. Sibthorp's recollection, as probably the white blackbird, which Aristotle says is peculiar to the neighbourhood of Mount Cyllene. Proceeding to Argos, and thence to Mycena, the travellers were highly gratified by finding, on the gate of the latter, those ancient lions which Pausanias describes as the work of the Cyclops; and near it the reputed tomb of Agamemnon, a circular building, formed of immense masses of stone, placed with such geometrical precision, though without mortar, that not

one had given way. That which forms the portal is described by Dr. Sibthorp as the largest stone he ever saw employed in any edifice. A number of fragments of vases, like those commonly called Etruscan, lay among the ruins of Mycena. At Hermione, now called Castri, in the Argolic peninsula, famous for the purple dye anciently prepared there, a vast pile of the shells from which that dye was obtained, and still denominated porphyri, served to ascertain the species, which is *murex trunculus* of Linnaeus, figured by Fabius Columna in his rare and learned work, *de Purpurâ*, under the name of *Purpura nostras violacea*. See PURPLE FISH. From this place Dr. Sibthorp and his friend intended to have coasted along the bay of Argos in a boat, but the sea was then infested with pirates, which obliged them to give up that project, and to return by land to Argos, whence they proceeded to Corinth, Patras, and by way of Elis to Pyrgos. Here they obtained another escort from Said Aga, to whose protection they had before been indebted, and safely reached Calamata, on the gulf of Corone, where they were detained by the celebration of Easter, on the 12th of April, amid a profusion of sky-rockets and crackers. Proceeding in a boat along the barren and craggy shore, covered with bushy and prickly euphorbiae, they reached Cardamoula. Here the Greeks were tolerably free from the tyranny of the Turks, and their persons and demeanour exhibited less marks of degeneracy.

From Cardamoula the travellers were escorted by the dependents of a hospitable Grecian chief, along a precipitous road, to Mistra, where they had the unexpected pleasure of meeting a party of their English friends, in the garb of Tartars, with whom they explored the site of ancient Sparta. After returning to Calamata, and surveying from the summit of a neighbouring precipice the ruins of Messenia, with the rich plains watered by the Paniscus, and bounded by the hills of Laconia, Dr. Sibthorp and Mr. Hawkins hastened to Corone, where a Venetian vessel waited to convey them to Zante, which place they reached on the 29th of April. Here Dr. Sibthorp parted from the companion of his tour, whom he was destined never to see again, but in whose friendship he safely confided in his last hours. Mr. Hawkins returned to Greece; while the subject of our memoir, leaving Zante on the 1st of May, experienced a most tedious voyage of twenty-four days to Otranto, though five days is the most usual time for that passage. He touched at the island of Cephalonia, and next at Preversa, on the Grecian shore, where, being detained by a contrary wind, he employed the 7th of May in visiting the ruins of Nicopolis. The weather was unfavorable, and Dr. Sibthorp here caught a severe cold, from which he never recovered. It seems to have proved the exciting cause of that disease which had long been latent in the mesenteric and pulmonary glands, and which terminated in a consumption. Being obliged by the weather to put in at the little island of Fanno, May 11th, the violent north-west wind 'continued,' as he too expressively says in his journal, 'to nurse his cough and fever.' He was confined to his bed, in a miserable hovel, to which, after frequent

attempts to sail, he was driven back six times by the unfavorable wind. At length the vessel was enabled to cast anchor in the port of Otranto on the 24th of May. Here he was obliged to submit to a quarantine of three weeks, part of which, indeed, was allowed to be spent in proceeding to Ancona. Thence he passed through Germany and Holland to England in the autumn of 1795, and his few succeeding months were chiefly marked by the progress of an unconquerable disease, for which the climates of Devonshire and Bath were, as usual, resorted to in vain. He died at Bath, February 8th, 1796, in the thirty-eighth year of his age, and lies interred in the abbey church.

By his will, dated Ashburton, January 12th, 1796, Dr. Sibthorp gives a freehold estate in Oxfordshire to the university of Oxford, for the purpose of first publishing his *Flora Graca*, in ten folio volumes, with 100 colored plates in each, and a *Prodromus* of the same work, in 8vo., without plates. His executors, the honorable Thomas Wenman, John Hawkins, and Thomas Platt, esqrs., were to appoint a sufficiently competent editor of these works, to whom the manuscripts, drawings, and specimens, were to be confided. The plan of the *Prodromus* was drawn out by Dr. Sibthorp, but nothing of the *Flora* except the figures was prepared, nor any botanical characters or descriptions whatever.

The only work which professor John Sibthorp published in his life time is a *Flora Oxoniensis*, in one volume 8vo., printed in 1794. It has the merit of being entirely founded on his own personal observation. The species enumerated amount to 1200, all gathered by himself, and disposed according to the Linnæan system, with the alterations of Thunberg, which were then new, but which are now not admitted as improvements. The adoption, though imperfect, of Hedwig's genera of mosses in this *Flora*, must be esteemed a more fortunate measure.

**SIBTHORPIA**, in botany, a genus of the angiospermia ordet and didynamia class of plants; natural order doubtful: *CAT.* spreading, and divided into five parts almost to the base: *COT.* divided into five parts in the same manner, which are rounded, equal, spreading, and of the length of the calyx; the stamens grow in pairs at a distance from each other: *CAPS.* compressed, orbicular, bilocular, the partition being transverse. There are two species, viz. 1. *S. evolvulacea*; and, 2. *S. Europaea*, or bastard moneywort, is a native of South Britain. The stems are slender, and creeping: the leaves are small, round, and notched. The flowers grow under the wings of the leaves, are small, and of a pale red color. It blossoms from July to September, and is found in Cornwall on the banks of rivulets.

**SIBYLS**, Lat. *sibyllæ*, in pagan antiquity, certain women said to have been endowed with a prophetic spirit, and to have delivered oracles, showing the fates and revolutions of kingdoms. Their number is unknown. Plato speaks of one, others of two, Pliny of three, *Ælian* of four, and *Varro* of ten; which last opinion is universally adopted by the learned. These ten Sibyls generally reside in the following places, Persia, Libya,

Delphi, Cumæ in Italy, Erythræa, Samos, Cumæ in Æolia, Marpessa on the Hellespont, Ancyra in Phrygia, and Tiburtis. The most celebrated of the Sibyls is that of Cumæ in Italy, whom some have called by the different names of Amalthea, Demiphile, Herophile, Daphne, Manto, Phemonoe, and Deiphobe. It is said that Apollo became enamoured of her, and offered to give her whatever she should ask. The Sibyl demanded to live as many years as she had grains of sand in her hand, but unfortunately forgot to ask for the continuance of her beauty, health, vigor, and bloom. The god granted her request, but she refused to gratify his passion, though he offered her perpetual youth and beauty. Some time after she became old and decrepit, her form decayed, melancholy paleness and haggard looks succeeded to bloom and cheerfulness. She had already lived about 700 years when *Æneas* came to Italy, and had three centuries more to live before her years were as numerous as the grains of sand which she had in her hand. She gave *Æneas* instructions how to find his father in the infernal regions, and even conducted him to the entrance of hell. It was usual for the Sibyl to write her prophecies on leaves, which she placed at the entrance of her cave; and it required particular care in such as consulted her to take up these leaves before they were dispersed by the wind, as their meaning then became incomprehensible. According to the most authentic historians of the Roman republic, the Erythrean Sibyl came to the palace of Tarquin II., with nine volumes, which she offered to sell for a very high price. The monarch disregarded her, and she immediately disappeared, and soon after returned, when she had burned three of the volumes. She asked the same price for the remaining six books; and, when Tarquin refused to buy them, she burned three more, and still persisted in demanding the same sum of money for the three that were left. This extraordinary behaviour astonished Tarquin; he bought the books, and the Sibyl instantly vanished, and never after appeared to the world. These books were preserved with great care by the monarch, and called the Sibylline verses. A college of priests was appointed to have the care of them; and such reverence did the Romans entertain for these prophetic books that they were consulted with the greatest solemnity, and only when the state seemed to be in danger. When the capitol was burnt, in the troubles of Sylla, the Sibylline verses, which were deposited there, perished in the conflagration; and, to repair the loss which the republic seemed to have sustained, commissioners were immediately sent to different parts of Greece to collect whatever verses could be found of the inspired writings of the Sibyls. The fate of these Sibylline verses which were collected after the conflagration of the capitol is unknown. There are now many Sibylline verses extant, but they are universally reckoned spurious; and it is said that they were composed in the second century by some of the followers of Christianity, who wished to convince the heathens of their error, by assisting the cause of truth with the arms of pious artifice.

**SICAMBRI, or SYCAMBRI**, an ancient nation of Germany, who were conquered by the Romans. They revolted under Augustus, who marched against them, but did not entirely subdue them. Drusus, however, conquered them, and they were carried away from their native country to inhabit some of the more western provinces of Gaul. (Dio. 54. Strabo, 4. Tac. ii. Ann. 26). See SAXONS.

**SICAMBRAI**, the country of the Sicambri, on the banks of the Rhine. It now forms the ex-devant province of Guelderland.

**SICAMORE**, *n. s.* Lat. *sicamorus*. A tree of trees you have the palm, olive, and *sicamore*. *Peachum.*

**SICANA**. See SICANIA.

**SICANI**, an ancient people of Spain, who emigrated from their native country into Italy, and afterwards into Sicily, which they called Sicania. See SICILY.

**SICANIA**, or **SICANA**, an ancient name of Sicily, from the Sican, or their king Sicanus.

**SICARD** (Roch Ambrose Cucuron), successor of the abbé l'Epée at the Parisian institution for the education of the deaf and dumb, was born September 20th, 1742, at Fousseret, near Toulouse, in which city he completed his studies for holy orders. He, however, devoted himself to the instruction of persons born deaf and dumb, and became director of a school established for that purpose by the archbishop of Bourdeaux; whence in 1789 he removed to Paris, and was chosen successor to the abbé l'Epée. On the 26th of August 1792 he was arrested in the midst of his pupils, by order of the commune of Paris: and, notwithstanding various efforts of his friends, was on the 2nd of September transferred to the prison of the abbey of St. Germain, where he narrowly escaped being a victim in the ensuing massacres. After a few days' imprisonment he was set at liberty. On the foundation of the normal school, in 1795, he was appointed professor of grammar; and about the same time was made a member of the Institute. He now became one of the conductors of a periodical work entitled *Annales Religieuses, Politiques, et Littéraires*, on account of which he was included by the directory in the number of the journalists exiled to Synamari. This persecution obliged him to conceal himself, and it was not till after the overthrow of the directory that he was able to return to his situation. The old age of Sicard was clouded with misfortunes arising from his own improvidence, and Buonaparte, to whom he applied in his difficulties, treated him with neglect. After the restoration he was more fortunate, being successively made a knight of the legion of honor, administrator of the hospital of Quinze Vingts, administrator of that of blind youths, and knight of the order of St. Michael. He was also honored with attentions from the foreign princes who visited Paris in 1814 and 1815. His death took place May 10th 1822. He was the author, besides other works, of *Eléments de Grammaire générale appliquée à la Langue Française*, 2 vols. 8vo.; *Cours d'Instruction d'un Sourd-muet de Naissance*, 8vo.; and *Théorie des Signes pour l'Instruction des Sourds-muets*, 2 vols. 8vo. He

also contrived a method of pasigraphy, or universal language.

**SICANUS**, 1. a king of Sican; and 2. A river of Spain, one of which gave the name Sicania to the island of Sicily.

**SIC'CITY**, *n. s.* Fr. *siccité*, Lat. *siccitas*, of *siccus*. Dryness; aridity; want of moisture.

That which is coagulated by a fiery *siccity* will suffer colliquation from an aqueous humidity, as salt and sugar. *Browne.*

The reason some attempt to make out from th *siccity* and dryness of its flesh. *Id. Vulgar Errors.*

In application of medicaments, consider wha degree of heat and *siccity* is proper. *Wiseman's Surgery.*

**SICE**, *n. s.* Fr. *six*. The number six *dice*.

My study was to cog the dice,  
And dexterously to throw the lucky *sice*;  
To shun ames-ace, that swept my stakes away.

*Dryden.*

**SICELIDES**; 1. the inhabitants of Sicily:—  
2. A name given to the Muses, by Virgil, be cause Theocritus, whose Bucolic poetry he professed to imitate, was a native of Sicily.—  
*Virg. Ecl. 4.*

**SICERA**, a name given to any inebriating liquor by the Hellenistic Jews. St. Chrysostom, Theodoret, and Theophilus of Antioch, who were Syrians, and who therefore ought to know the signification and nature of *sicera*, assure us that it properly signifies palm-wine. Pliny acknowledges that the wine of the palm tree was very well known through all the east, and that it was made by taking a bushel of the dates of the palm-tree, and throwing them into three gallons of water; then squeezing out the juice, it would intoxicate like wine. The wine of the palm-tree is white: when it is drunk new, it has the taste of the cocoa, and is sweet as honey. When it is kept longer, it grows strong and intoxicates. After long keeping, it becomes vinegar.

**SICH**, *adj.* A corruption of such. See *SUCU*.

I thought the soul would have made me rich;  
But now I wote it is nothing *sich*;  
For either the shepherds been idle and still,  
And led of their sheep what they will.

*Spenser's Pastorals.*

**SICHAEUS**, **SICHARBUS**, or **ACHERBAS**, the son of Phisthenes, uncle and husband of Eliza, or Dido, and priest of Hercules; who was murdered by Pygmalion, his wife's brother. See *DIDO* and *PYGMALION*.

**SICILIA** (*Lat.*), Sicily. The ancient name of the three capes of Sicilia were Pelores, Pachynum, and Lilybeum.

**SICILIAN** (from Sicilia), *of*, or belonging to, or produced from, or in Sicily.

**SICIL'AN**, in music, denotes a kind of gay sprightly air, or dance, probably invented in Sicily, somewhat of the nature of an English jig; usually marked with the characters  $\frac{6}{8}$ , or  $\frac{12}{8}$ . It consists of two strains; the first of four, and the second of eight, bars or measures.

**SICILIAN VESPERS**, a horrible massacre of the French in Sicily, A. D. 1282. See *NAPLES*.

**SICILIES**, KING OF THE Two, the title of the king of Naples; for Naples and Sicily are the

two Sicilies meant, there being no other place of the name in Europe, or perhaps on the globe; nor is Naples itself properly so named, excepting in this political connexion. See NAPLES.

SICILY, a large island in the Mediterranean Sea, adjoining to the southern extremity of Italy, and extending from lat.  $36^{\circ} 25'$  to lat.  $38^{\circ} 25'$  N., and from long.  $12^{\circ} 50'$  to long.  $16^{\circ} 5'$  E.

Anciently this island was called Sicania, Sicilia, and Trinacia, or Triquetra; the two former from the Sican and Siculi, who peopled a considerable part of the country; the two latter from its triangular figure. Its first inhabitants, according to the most respectable ancient authors, were the Cyclopes and Læstrigones, who are said to have settled in the countries adjoining to Mount Aetna; but of their origin we know nothing, except what is related by the poets. After them came the Sicani, who called themselves the original inhabitants of the country; but several ancient historians inform us that they came from a country in Spain watered by the river Sicanus. Diodorus, however, is of opinion that the Sicani were the most ancient inhabitants of this island. He tells us that they were in possession of the whole, and applied themselves to cultivate and improve the ground in the neighbourhood of Aetna, which was the most fruitful part of the island; they built several small towns and villages, on the hills, to secure themselves against thieves and robbers; and were governed, not by one prince, but each city and district by its own king. Thus they lived till Aetna began to throw out flames, and forced them to retire to the western parts of the island, which they continued to inhabit in the time of Thucydides. Some Trojans, after the destruction of their city, landed in the island, settled among the Sicani, and built the cities of Eryx and Egesta, uniting themselves with them, and taking the general name of Elymi or Elymæi. They were afterwards joined by some Phocenses, who settled here on their return from the siege of Troy. After the Sicani had for many ages enjoyed an undisturbed possession of the whole of Sicily, or such parts of it as they chose to inhabit, they were visited by the Siculi, who were the ancient inhabitants of Ausonia properly so called; but, being driven out thence by the Opici, they took refuge in the island of Sicily. Not being contented with the narrow bounds allowed them by the Sicani, they began to encroach upon their neighbours; upon which a war ensuing, the Sicani were utterly defeated, and confined to a corner of the island, the name of which was now changed from Sicania into that of Sicilia.

Both the ancients and moderns have supposed that Sicily was separated from the continent by an earthquake, the strait of Messina, between it and Calabria, being only a mile in breadth, from Cape Faro in Sicily, to Cape Volpe in Calabria, but widens as it proceeds, and at Messina, four leagues from cape Faro, is four miles. Pomponius Mela observes, ‘*Sicilia, ut ferunt, aliquando agro Brutio adnexa.*’ To the same purpose Virgil (*En. i. iii. v. 414*) says:—

Hac loca vi quondam, et vasta convulsa ruina  
Dissiluisse ferunt, cum protinus utraque Tellus

Una foret. Venit medio vi pontus et undis  
Ilesperium siculo latus abscidit.

Silius Italicus details this event, lib. xiv. :—

Ausonia pars magna jacet Trinacia Tellus  
Ut semel expugnante noto, et vestantibus undis  
Acceptit freta corules propulsa tridente,  
Namque per occultum cæca vi turbinis olim  
Impactum Pelagus lacerata viscera terra  
Discidit, et medio perrumpens arva profundo,  
Cum populis pariter convulsas transtulit arbas.

Claudian states positively

Trinacia quondam Italia pars fuit.

On cape Faro, the ancient Pelorium, is a light-house, or pharos, whence its modern name, and whence also the strait is called by seamen the Faro of Messina.

Sicily is throughout intersected by ridges of hills, but none of any considerable height except Mount Aetna, one of the most celebrated volcanoes of Europe (see AETNA), and Mount Eryx, on the north-west, which, like Aetna, is isolated, and was anciently celebrated for a temple of Venus Erycina. The climate approaches to that of the tropics, the only appearance of winter being towards the summit of Aetna, which retains the snow throughout the year, and supplies a valuable object of commerce. The natural fertility of the island, which formerly acquired it the name of the granary of Rome, remains undiminished, but the sloth of the present inhabitants scarcely draws from the soil more than sufficient for their own nourishment. In the mineral kingdom it possesses gold, silver, lead, copper, antimony, and sulphur.

The labor of the fields, and even the dragging of carts and waggons on the roads, is in Sicily generally performed by oxen. For travelling, recourse is had to mules, who here, as in other parts of the south of Europe, discover great steadiness in traversing a wretched road, and no less patience in supporting fatigue. In general the breed of cattle and horses has been much neglected, and is at present advancing very slowly towards improvement. Game is found in abundance, and most of the wild animals of the continent.

The only manufacturing establishments of extent are at Palermo, Messina, and Catania: they consist of silk, cotton, and linen; in part also of woollens, though the wool of the island is of indifferent quality. If to these we add hats, cutlery, harness, carriages, and household furniture, made at Palermo and the principal towns, we have the amount of the Sicilian manufactures. A number of articles for the peasantry are in this, as in other backward countries, made at their own houses, without the benefit of machinery or division of labor. Hence comparatively few exchanges, a slow intercourse between town and country, and in general those symptoms of stagnation which strike an Englishman so forcibly on visiting a foreign country.

In respect to commerce, Sicily, from the variety of its products, the excellence of several of its harbours, and the general safety of its coast for navigation, would, under an enlightened government, acquire great importance. The exports and imports are, however, comparatively small, neither

exceeding £1,500,000 for the whole island. Here are no banks, no insurance companies, and very little confidence in government. The interior trade is cramped by the want of roads, the navigation by the quarantine laws, which are said to be enforced very unequally, and to be unfairly dispensed with in favor of those who are in connexion with the public officers. The occupancy of the island by the British troops, from 1806 to 1816, was a source of considerable advantage; and in the latter year a treaty was concluded between the courts of Naples and London, affording considerable privileges to the British. The chief exports of Sicily are silk, corn, salt, olive oil, sumac, wine, fruits of various kinds; also goat, kid, and other skins. The imports consist of colonial produce, hardware, jewellery, lead, and manufactured articles in great variety, but small quantity. Of the fisheries carried on along the coast the principal is the tunny fishery. Money accounts are here kept in ounces, taris, and grains.

1 grain is equal to  $\frac{1}{2}d.$  sterling.

20 grains = 1 tari or 5d. sterling.

30 taris = 1 ounce or 12s. 6d. sterling.

Of late, attempts have been made to raise the Sicilian from a provincial to a national tongue. A dictionary has been printed, and several poets have published in their native language. In ancient times Sicily produced several writers of note, as Theocritus, Empedocles, Stesichorus, and Epicarmus; also painters and sculptors not unworthy of competition with those of Greece. In modern times, or rather since the beginning of the seventeenth century, there have appeared some successful candidates in the belles lettres, poetry, and natural history; and at present Palermo, Catania, and Messina, contain individuals of distinguished attainments; but their efforts have been discouraged by the want of a free press, the inadequacy of the public libraries, and the difficulty of intercourse with the more enlightened part of Europe. Education may be said to be in almost the same incipient state: there has yet been no general establishment of elementary schools; and the colleges of Palermo, Catania, and other large towns, have been conducted on a very antiquated plan, Latin and the doctrines of the Catholic church having excluded every branch of ordinary knowledge. The schools called Scuoli Normali, established in 1789, are on a better footing, the pupils being limited in number, and the teachers subjected to a previous examination. Girls, as in other Catholic countries, are put, at the age of eight or ten, into a convent or *retiro*, where, during six or eight years, they are taught little else than reading, writing, or the ceremonies of the Catholic faith. Fortunately the new plan of teaching (of Bell and Lancaster) is at present (1820) finding its way into Sicily. The religion of Sicily is the Catholic; the number of ecclesiastics in Sicily is said to amount to 70,000, exclusive of a still greater number of monks and nuns; all, or almost all, marked by the uniform character of ignorance and superstition.

The Sicilian parliament is composed of three branches: the nobles to the number of 227; the

prelates to the number of sixty-one; the deacons or deputies from universities, cities, and crown estates, to the number of only forty-three. Its authority is in a great measure nominal, and it has done little or nothing towards repressing the abuses which prevail notoriously in every branch of administration. The public officers are so inadequately paid as necessarily to have recourse to peculation. The hospitals and other public establishments, even when well endowed, are in a very uncomfortable state. As to the administration of justice, the laws, however good in the letter, are inoperative against a delinquent of influence or fortune. The judges are open to all kinds of corruption. The rarity of capital punishment would claim our praise were it not accompanied, in cases of doubtful evidence, by a recourse to torture: in short no country could be more in want of that political reform which was begun by the British government when in possession of the island, and is now (1821) likely to be carried on by the inhabitants themselves.

The revenue of Sicily is computed at £1,000,000; a sum that would not be exorbitant were the taxes judicious in their nature, and equal in the mode of levying; but, until lately, the barons or landholders were to a certain degree exempt, and the burden was unmercifully imposed on the commoners. The executive branch is subject to no enquiry or responsibility in regard to the application of the public funds. The Sicilian army in time of peace does not exceed 10,000 men; the pay of the soldiers, adequate only to their subsistence in a plentiful year, makes them dependent on public charity in a season of dearth and scarcity. A number of the officers are foreigners. The navy is limited to one ship of the line, two frigates, and five sloops: the gun boats are numerous; but the whole is in a poor state.

Sicily has been recently divided into seven intendancies, instead of the three great provinces which before formed its component parts. These intendancies, and their population, and principal cities, are as follows:—

Intendancies.	Population in 1817.	Capitals and their population.	
Palermo	405,231	Palermo	180,000
Messina	236,784	Messina	44,650
Catania	289,406	Catania	45,081
Siragosa	192,710	Siragosa	13,850
Caltanissetta	155,225	Caltanissetta	15,627
Girgenti	288,877	Girgenti	14,882
Trapani	145,712	Trapani	24,330
	1,713,945		

The principal promontories, most of which, as well as its rivers, are celebrated by the ancient poets, are Cape Faro, the north-east point. Cape Passaro (Pachynum), the south point, on an island, half a league from the main, and a mile in circuit, surrounded by rocks: on it is a fortified tower and light-house. On the south coast from the east are Cape Scalabri, Cape St.

Marco, and Cape Sorello. Cape Bæo (Lyli-beum), at the west end, is a low promontory, north of which is the island San Pantaleo (Motya). On the north coast are Cape St. Vito, the west point of the gulf of Castel-a-Mare, Cape Orlando, Cape Biancho, and others.

The north coast, being bounded by mountains (Nebrodes Mons), has but few streams that deserve the name of rivers. Those of the east and south are more considerable. Amongst the former are the Alcantara (Onobala), south of Taormina, the Giaretta (Symæthus), south of Catania, the largest of the island, and the Atellaro, north of Cape Passaro. On the south coast the rivers are the Salsø (Himera), which empties itself at Alicata, the Platani (Camicus), and the Bellici (Hypsa).

Messina (Messana), from its ancient splendor, as well as from being formerly the residence of the viceroy for six months of the year, disputes the honor of being the capital : it is situated near the north extremity of the east coast. The ravages of the plague in 1743, and other causes, have greatly reduced its population, which is thought not to exceed 25,000, though it has means of containing five times that number. Its port is entirely natural, and one of the best in Europe, being formed by a semicircular peninsula on the south-east, five miles in circuit, with an entrance three-quarters of a mile wide, and capable of holding 1000 sail in thirty-five to forty fathoms depth. The largest vessels can also make fast to the quay, which lines the peninsula for a mile in length. The harbour is protected by the castle of St. Salvador, on the isthmus of the peninsula, by four forts on its points, and by a battery on the west shore. With these advantages, and that of being a free port, its trade is trifling.

Taormina (Tauromenium), a celebrated city of antiquity, is now a poor village, on a hill two miles above the level of the sea, at the foot of which is the village and road of Giardini. At Taormina are seen the most entire remains of a Roman theatre in Italy, with other antiquities.

Jaci d'Aquila is a little town at the mouth of the Fiume-Freddo, cold river, the ancient Acis, celebrated by the fable of Acis and Galatea, and whose waters, though said to be colder than ice, never freeze. They were praised by the ancients for their salubrity, but at present are thought to be poisonous from containing vitriol.

Catania, the third city of Sicily, contains 40,000 inhabitants. It has several times been destroyed by earthquakes and eruptions of Etna, whose foot is but five miles distant. Since the earthquake in 1693, which totally overturned it, it has been rebuilt on a regular plan, with straight and wide streets, and the houses only one story. It has a good port, but little or no trade.

Augusta, a fortified town of 9000 inhabitants, and a good port, is on the south side of an island, formerly a peninsula, but separated from the main by the earthquake of 1693.

Syracuse, called by the natives Saragoza, one of the most celebrated cities of the Roman empire, whose walls had 180 stades of circuit, is now a poor town of 14,000 inhabitants. The land on which it stands was anciently a peninsula, but the isthmus has been cut through for its defence.

Besides which it has a very strong citadel. Its two ancient ports still exist, the southern named Porto Maggiore (Portus Magnus), has six miles at its greatest breadth, and is entered by a strait one-third of a mile wide. In this port, twenty yards from the shore, a spring of fresh water bubbles up amidst the salt. The northern port, Porto Picolo (Portus Minor and Marmoreus), held the naval force of ancient Syracuse. The fountain of Arethusa, celebrated by poets and historians, and to which divine honors were paid, is now a brackish stream, which issues suddenly from the earth by two openings, and serves to wash the dirty rags of the modern Syracuseans.

About 300 years after the arrival of the Siculi, the island first began to be known to the Greeks, who established various colonies, and built many cities in different parts of the island; and it is only from the time of their arrival that we have any history of the island. The first of the Greeks that came into Sicily were the Chalcidians of Eubœa, under the conduct of Thucles, who built Naxus, and a famous altar of Apollo, which, as Thucydides tells us, was still standing in his time without the city. The year after, which was, according to Dionysius Halicarnassensis, the third of the seventeenth Olympiad, Archias the Corinthian, one of the Heraclidae, laid the foundations of Syracuse. Seven years after, a new colony of Chalcidians founded Leontini and Catana, after having driven out the Siculi, who inhabited that tract. About the same time, Lamas with a colony from Megara, a city of Achæa, settled on the river Pantacius, at a place called Trotilum, where his adventurers lived some time in common with the Chalcidians of Leontini; but, being driven thence by the Leontines, he built the city of Thapsus, where he died. Upon his death, the colony left Thapsus; and under the conduct of Hyblon, king of the Siculi, founded Megara Hyblæa, where they resided 245 years, till they were driven out by Gelon, tyrant of Syracuse. During their abode at Megara they sent one Pamilus, who was come from Megarian Achæa their original city, to build Selinus. This city was founded about 100 years after the foundation of Megara. Anti-phemus and Entimus, the former a Rhodian, the other a Cretan, led each a colony of their countrymen, and jointly built the city of Gela on a river of the same name, establishing in their new settlement the Doric customs, about forty-five years after the founding of Syracuse. The inhabitants of Gela founded Agrigentum 108 years after their arrival in Sicily, and introduced the same customs there. A few years after, Zancle was built by the pirates of Cumæ in Italy; but chiefly peopled by the Chalcidians, Samians, and Ionians, who chose rather to seek new settlements than live under the Persian yoke. Some time after Anaxales, tyrant of Rhegium, drove out the ancient proprietors; and, dividing his lands among his followers, called the city Messena, or Messene; which was the name of his native city in Peloponnesus. The city of Himera was founded by the Zancleans under the direction of Euclides, Simus, and Sacon; but peopled by the Chalcidians and some Syracuseans.

exiles, who had been driven out by the contrary faction. The Syracusians built Acre, Chasmenæ, and Camarina; the first seventy years, the second ninety, and the third 135, after the foundation of their own city. This is the account which Thucydides, a most judicious and exact writer, gives us of the various nations, whether Greeks or barbarians, who settled in Sicily. Strabo counts among the ancient inhabitants of Sicily, the Morigetes, who being driven out of Italy by the Oenotrians, settled in that part of the island where the ancient city of Morgantium stood. The Campani, who assumed the name of Mamertini, that is, invincible warriors, and the Carthaginians, who settled very early in Sicily, ought likewise to be counted among the ancient inhabitants of the island. Before this period the history of Sicily is blended with fables, like the early history of almost every other country. After the settlement of the Greeks in the island, its various revolutions have been traced from their several sources by many writers; but by none with greater accuracy or brevity than Mr. Swinburne. From his account of his Travels in the two Sicilies, we therefore quote the following concise history of this kingdom:—

'Aristocracy prevailed at first in the Greek settlements, but soon made way for tyranny; which in its turn was expelled by democracy. One of the earliest destroyers of common liberty was Phalaris of Agrigentum, who reigned about A. A. C. 600. See PHALARIS. His example was contagious; a legion of tyrants sprang up, and not a commonwealth in the island escaped the lash of a usurper. Syracuse was most oppressed and torn to pieces by dissension; as its wealth and preponderance in the general scale held out a greater temptation than other cities to the ambition of wicked men. It requires the combined testimony of historians to enforce our belief of its wonderful prosperity, and the no less extraordinary tyranny of some of its sovereigns. These Grecian colonies attained to such excellence in arts and sciences as emboldened them frequently to vie with the learned and ingenuous in the mother country: nay, often enabled them to bear away the palm of victory. There needs no stronger proof of their literary merits than a bare recital of the names of Archimedes, Theocritus, Gorgias, and Charondas. But the Sicilian Greeks were not destined to enjoy the sweets of their situation without molestation. Very soon after their arrival, the inhabitants of the neighbouring coast of Africa began to aspire to a share of Sicily. Carthage sent large bodies of forces at different times to establish their power in the island, and about 500 years before the Christian era they had made themselves masters of all the western parts of it. The Siculi retained possession of the midland country, and the south and east coasts were inhabited by the Greeks. About that time Gelo was chosen prince of Syracuse on account of his virtues, which grew still more conspicuous after his exaltation; had the example he set been followed by his successors, the advantages of freedom would never have been known or wished for by the Syracusans. The Carthaginians found in him a

vigorous opponent to their project of enslaving Sicily; a project invariably pursued, but never accomplished. Hiero I. succeeded his brother Gelo, and, contrary to the usual progression, began his reign by a display of bad qualities. Sensible of his error, and improved by experience, he afterwards adopted more equitable measures. At his death the Syracusans threw off the yoke, and for sixty years revelled in all the joys of freedom. Their peace was, however, disturbed by the Athenians and the Carthaginians. The latter plundered Agrigentum, and threatened ruin to the rest of the Grecian states; but a treaty of peace averted that storm. The Athenians, under pretence of supporting their allies the people of Segesta, but in reality from a thirst of dominion, invested Syracuse with a formidable land and naval armament under the command of Nicias; but in consequence of a rash indigested plan, ill conducted attacks, and inadequate supplies, their whole host was cut to pieces, or led away into captivity. Syracuse had scarcely time to breathe after her victory, ere intestine wars broke out, and raised Dionysius I. to supreme command.' See DIONYSIUS. 'Avarice, despotism, and cruelty, marked his reign; but his military enterprises were crowned with constant success.' Like the modern tyrant of Europe, he patronised men of letters, and was even ambitious of literary fame. 'He died in peace, and bequeathed a powerful sovereignty to a son of his name, tainted with the same and worse vices, but not endowed with equal capacity and martial ability; in such hands the rod of tyranny ceased to be formidable, and the tyrant was driven out of Sicily by the patriotic party; but matters were not sufficiently settled for popular government, and Dionysius II. resumed the sceptre for a while, till Timoleon forced him into perpetual exile.'

Liberty seemed now to be established on a permanent basis; but in Syracuse such prospects always proved illusory. Agathocles, a tyrant more inhuman than any preceding usurper, seized the throne, and deluged the country with blood. He was involved in a perilous contest with the Carthaginians, who obtained many advantages over him, drove his troops from port to port, and at last blocked up his capital. In this desperate situation, when all foreign helps were precluded, and hardly a resource remained at home, the genius of Agathocles compassed his deliverance by a plan that was imitated among the ancients by Hannibal, and among the moderns by the famous Cortes. He embarked with the flower of his army; forced his way through innumerable obstacles; landed in Africa; and, having burnt his fleet, routed the Carthaginians in a pitched battle, and laid their territory waste. Carthage seemed to be on the brink of ruin, and that hour might have marked her downfall had the Sicilian host been composed of patriotic soldiers, and not of ungovernable assassins; discord pervaded the victorious camp, murder and riot ensued; and the tyrant, after beholding his children and friends butchered before his face, escaped to Sicily, to meet a death as tragical as his crimes deserved. See AGATHOCLES. Anarchy now raged throughout the island, and every

fiction was reduced to the necessity of calling in the assistance of foreign power; among whom Pyrrhus king of Epirus took the lead, and reduced all parties to some degree of order and obedience. But ambition soon prompted him to invade those rights which he came to defend; he cast off the mask, and made Sicily feel under his sway as heavy a hand as that of its former oppressors; but the Sicilians soon assumed courage and strength enough to drive him out of the island. About this period the Mamertini, whom Mr. Swinburne indignantly styles a crew of miscreants, surprised Messina, and, after a general massacre of the citizens, established a republican form of government. See MAMERTINI. Their commonwealth became so troublesome a neighbour to the Greeks that Hiero II., who had been raised to the chief command at Syracuse in consideration of his superior wisdom and warlike talents, found himself necessitated to form a league with Carthage to destroy this nest of villains. In their distress the Mamertini implored the assistance of Rome, though the senate had recently punished with exemplary severity one of their own legions for a similar outrage committed at Rhegium. The virtue of the Romans gave way to the temptation, and the desire of extending their empire beyond the limits of Italy cast a veil over every odious circumstance attending this alliance. A Roman army crossed the Faro, relieved Messina, defeated the Carthaginians, and humbled Hiero into an ally of the republic. Thus began the first Punic war, which was carried on for many years in Sicily with various success.

The genius of Hamilcar Barcas supported the African cause under numberless disappointments, and the repeated overthrows of his colleagues; at last, finding his exertions ineffectual, he advised the Carthaginian rulers to purchase peace at the price of Sicily. Such a treaty was not likely to be observed longer than want of strength should curb the animosity of the vanquished party; when their vigor was recruited, Hannibal, son of Hamilcar, easily persuaded them to resume the contest, and for sixteen years waged war in the heart of the Roman territories. Meanwhile Hiero conducted himself with so much prudence that he retained the friendship of both parties, and preserved his portion of Sicily in perfect tranquillity. He died in extreme old age, beloved and respected both at home and abroad. See HIERO II. His grandson Hieronymus, forsaking this happy line of politics and contracting an alliance with Carthage, fell an early victim to the troubles which his own folly had excited. Once more, and for the last time, the Syracusans found themselves in possession of their independence; but the times were no longer suited to such a system; dissensions gained head and distracted the public councils. Carthage could not support them, or prevent Marcellus from undertaking the siege of Syracuse, immortalised by the mechanical efforts of Archimedes, and the immensity of the plunder. See SYRACUSE.

The Sicilians after this relinquished all martial ideas, and, during a long series of generations, turned their attention solely to the arts of

peace and the labors of agriculture. Their position in the centre of the Roman empire preserved them both from civil and foreign foes, except in two instances of a servile war. The rapacity of their governors was a more constant and insupportable evil. In this state of apathy and opulence Sicily remained down to the seventh century of our era, when the Saracens began to disturb its tranquillity. The barbarous nations of the north had before invaded and ravaged its coasts, but had not long kept possession. The Saracens were more fortunate. In 827 they availed themselves of quarrels among the Sicilians to subdue the country. Palermo was chosen for their capital, and the standard of Mahomet triumphed about 200 years. In 1038 George Maniaces was sent by the Greek emperor with a great army to attack Sicily. He made good his landing, and pushed his conquests with vigor; his success arose from the valor of some Norman troops, which were at that time unemployed and ready to sell their services to the best bidder. Maniaces repaid them with ingratitude; and by his absurd conduct gave the Mussulmans time to breathe, and the Normans a pretext and opportunity of invading the Imperial dominions in Italy. Robert and Roger of Hauteville afterwards conquered Sicily on their own account, not as mercenaries; for, having substantially settled their power on the continent, they turned their arms against this island in obedience to the dictates of zeal and ambition. After ten years struggle, the Saracens yielded up the rich prize, and Robert ceded it to his brother Roger, who assumed the title of great earl of Sicily, ruled the state with wisdom, and ranks deservedly among the greatest characters in history. He raised himself from the humble station of a poor younger son of a private gentleman, to the exalted dignity of a powerful monarch, by the sole force of his own genius and courage; he governed a nation of strangers with vigor and justice, and transmitted his possessions undisputed to his posterity. Such an assemblage of great qualities is well entitled to our admiration.

Earl Roger was succeeded by his son Simon, whose reign was short, and made way for a second son called Roger II. In 1127 this prince joined to his Sicilian possessions the whole inheritance of Robert Guiscard (see NAPLES), and assumed the regal style. The greatest part of his reign was taken up in quelling revolts in Italy, but Sicily enjoyed profound peace. In 1154 his son William ascended the throne, and passed his life in war and confusion. William II. succeeded his father and died without issue. His defeat by Saladin is noticed under the article EGYPT. Tancred, though basely born, was elected his successor, and after him his son William III., who was vanquished by Henry of Suabia. During the troubles that agitated the reign of his son, the emperor Frederick, peace appears to have been the lot of Sicily. A short-lived sedition, and a revolt of the Saracens, are the only commotions recorded. For greater security the Saracens were removed to Puglia, 400 years after the conquest of Sicily by their ancestors. Under Conrad and Manfred Sicily

remained quiet; and from that time the history of Sicily is related under the article NAPLES. At the death of Charles II. of Spain his spoils became an object of furious contention; and, at the peace of Utrecht, Sicily was ceded to Victor, duke of Savoy, who, not many years after, was forced by the emperor Charles VI. to relinquish that fine island, and take Sardinia as an equivalent. But, as the Spaniards had no concern in these bargains, they made a sudden attempt to recover Sicily, in which they failed, through the vigilance of the English admiral Byng. He destroyed their fleet in 1718, and compelled them to drop their scheme for a time. In 1734 the Spanish court resumed their design with success. The infant Charles drove the Germans out, and was crowned king of the two Sicilies at Palermo. When he passed into Spain, to take possession of that crown, he transferred the Sicilian diadema to his son Ferdinand III. of Sicily and IV. of Naples, and it has ever since remained in the possession of the same family. See NAPLES. We conclude the history of Sicily with a piece of very important local history. About 1785 Count Caraccioli was appointed viceroy. The government of this nobleman was very beneficial to Sicily, as he, in a great measure, cleared the island of the banditti that used to infest it, and made several excellent regulations for the establishment of social order and personal security. He deserves the thanks of every well-wisher to mankind for having abolished the court of inquisition which had been established in this country by Ferdinand the Catholic, and made dependent on the authority of the grand inquisitor of Spain. Its last auto-da-fe was held in 1724, when two persons were burnt. At length Charles III. rendered it independent of the Spanish inquisitor, and abridged its power, by forbidding it to make use of the torture, and to inflict public punishments. The marchese Squillace and his successor for the marchese Tanucci, were both enemies to the hierarchy; and, during their vice-royalties, took care to appoint sensible and liberal men to the office of inquisitor; the last of whom was Ventimiglia, a man of a most humane and amiable character, who heartily wished for the abolition of this diabolical court, and readily contributed towards it. While he held the office of inquisitor, he always endeavoured to procure the acquittal of the accused; and, when he could succeed no other way, would pretend some informality in the trial. The total annihilation of this instrument of the worst of tyranny was reserved for Caraccioli. A priest, being accused to the inquisition, was dragged out of his house and thrown into the dungeon. He was condemned; but on account of informality, and a violation of justice in the trials, he appealed to the viceroy, who appointed a committee of jurists to examine the process. The inquisitor refused to acknowledge the authority of this commission; pretending that to expose the secrets of the holy office, and to submit its decisions to the examination of lay judges, would be so inconsistent with his duty, that he would see the inquisition abolished rather than consent to it. Caraccioli took him at his word, and procured

a royal mandate by which the holy office was at once annihilated. He assembled all the nobility, judges, and bishops, on the 27th of March, 1782, in the palace of the inquisition, and commanded the king's order to be read; after which he took possession of the archives, and caused all the prisons to be set open: in these were at that time only two prisoners who had been condemned to perpetual confinement for witchcraft. The papers relating to the finances were preserved; but all the rest were publicly burned. The possessions of the holy office were assigned to the use of churches and charitable institutions: but the officers then belonging to it retained their salaries during their lives. The palace itself is converted into a custom-house, and the place where heretics were formerly roasted alive, for the honor of the Catholic faith, is now changed into a public garden. The cognizance of offences against orthodoxy is committed to the bishops; but they cannot cite any one to appear before them without permission from the viceroy; neither can they confine any person in a solitary prison, nor deny him the privilege of writing to his friends, and conversing freely with his advocate. In 1798 the king of the two Sicilies having irritated the French republicans, by taking part in the war, they soon made reprisals and obliged him to flee for refuge, with the whole royal family, on board the British fleet under lord Nelson; who landed them safely at Palermo in Sicily, on the 27th of December, where they continued till the French were finally expelled from Italy; after which they returned to Naples. Thence they were again driven in the beginning of the year 1806: NAPLES, see that article, was given to Buonaparte's brother-in-law, Murat; until, in May, 1815, he participated in the general overthrow of that despot's schemes; and, in the June of that year, the old royal family was restored.

SICK, <i>adj.</i> & <i>v. n.</i>	Saxon, <i>seoc</i> ;
SICK'EN, <i>v. a.</i> & <i>v. n.</i>	Dutch, <i>sick</i> . Af-
SICK'LY, <i>adv.</i> , <i>adj.</i> , & <i>v. a.</i>	flicted with dis-
SICK'NESS, <i>n. s.</i>	ease; with <i>of</i> before the disease; disordered; corrupted; disgusted: as a verb neuter ( <i>obsolete</i> ) to take disease: to sicken, verb active, is to make sick; disease; weaken: as a verb neuter, to grow sick; grow weak; decay; be filled with disgust: the adverb, adjective, and noun substantive following, correspond.

**Himself took our infirmities and bare our sicknesses.**  
 **Matthew.**

In poison there is physic; and this news,  
That would, had I been well, have made me sick,  
Being sick, hath in some measure made me well.

Cassius. I am sick of many griefs. *Id.* *Julius Caesar.*

*Cassius I am sick of many grieves* *Ia. Julius Caesar.*  
What we oft do best,

By sick interpreters, or weak ones, is

Not ours, or not allowed : what worst, as oft  
Hitting a greater quality, is cried up.

Hitting a grosser quality, is cried up  
For our best act. *Id. Henry*

A little time before

*Id. Henry IV*

*Kinsmen of mine have  
By this so sickened their estates, that never*

They shall abound as formerly. *Id. Henry VIII.*

I know the more one *sickens* the worse he is.  
*Shakspeare.*

**Impute**  
His words to wayward sickness and age.  
*Id. Richard II.*

We wear our health but *sickly* in his life,  
Which in his death were perfect.  
*Id. Macbeth.*

I'm fallen out with more headier will,  
To take the indisposed and *sickly* fit  
For the sound man.  
*Id. King Lear.*

A pleasing cordial, Buckingham,  
Is this thy vow unto my *sickly* heart.  
*Id. Richard III.*

The native hue of resolution  
Is *sicklied* o'er with the pale cast of thought.  
*Shakspeare.*

My people are with *sickness* much enfeebled,  
My numbers lessened.  
*Id. Henry V.*

The judges that sat upon the jail, and those that  
attended, *sickened* upon it and died.  
*Bacon.*

Where's the stoick can his wrath appease,  
To see his country *sick* of Pym's disease?  
*Cleaveland.*

**Despair**  
Tended the *sick*, busiest from couch to couch.  
*Milton.*

Merely to drive away the time, he *sickened*,  
Fainted, and died; nor would with ale be quickened.  
*Id.*

Next compare the *sickliness*, healthfulness, and  
fruitfulness of the several years.  
*Graunt.*

Time seems not now beneath his years to stoop,  
Nor do his wings with *sickly* feathers droop.  
*Dryden.*

The ghosts repine at violated night,  
And curse the' invading sun, and *sicken* at the  
sight.  
*Id.*

The moon grows *sickly* at the sight of day,  
And early cocks have summoned me away.  
*Id.*

Would we know what health and ease are worth,  
let us ask one that is *sickly*, or in pain, and we have  
the price.  
*Grew.*

He was not so *sick* of his master as of his work.  
*L'Estrange.*

Why should one earth, one clime, one stream,  
one breath,  
Raise this to strength, and *sicken* that to death?  
*Prior.*

To animate the doubtful fight,  
Namur in vain expects that ray;  
In vain France hopes the *sickly* light  
Should shine near William's fuller day.  
*Id.*

Nothing makes a more ridiculous figure in a man's  
life than the disparity we often find in him *sick* and  
well.  
*Pope.*

Why will you break the sabbath of my days,  
Now *sick* alike of envy and of praise?  
*Id.*

Abstract what others feel, what others think,  
All pleasures *sicken*, and all glories sink.  
*Id.*

Trust not too much your now resistless charms,  
Those age or *sickness* soon or late disarms.  
*Id.*

There affection with a *sickly* mien,  
Shows in her cheek the roses of eighteen;  
Practised to lisp, and hang the head aside,  
Faints into airs, and languishes with pride.  
*Id.*

When on my *sickly* couch I lay,  
Impatient both of night and day,  
Then Stella ran to my relief.  
*Swift.*

When I say every *sickness* has a tendency to death,  
I mean every individual *sickness* as well as every  
kind.  
*Watts.*

Your bodies are not only poor and perishing, like  
your clothes, but, like infected clothes, fill you with  
all diseases and distempers, which oppress the soul  
with *sickly* appetites and vain cravings.  
*Law.*

**SICK-BAY**, or **SICK-BIRTH** (Fr. poste aux malades), in line of battle ships, is a place immediately under the forecastle, usually fitted up on the starboard side, and appropriated to the reception of the sick and wounded seamen. It is partitioned off by wooden frames screened with canvas, and may be easily taken down and folded on coming to action. When there is not sufficient room in the sick bay for the patients, other places are fitted up between decks, &c.

*The sick and hurt and transport board for prisoners of war* consists in time of war of six commissioners and a secretary, one of whom is always physician, who are called commissioners of that board. Their duty consists in arranging, in the most advantageous manner, the various departments relating to the prisoners of war in the United Kingdom, with respect to receiving, discharging, exchanging, victualling, and clothing them. It also extends to our naval hospital departments, so far as victualling, clothing, and supplying medicines, necessaries, &c.; and they have the appointment of all officers thereto, except governors, chaplains, physicians, and lieutenants, who are within the patronage of the admiralty board. They appoint first and second lieutenants, stewards, and clerks to prison-ships; also all medical officers to the navy. The medical commissioner has the examining of the surgeons and assistant surgeons, intended for the royal navy, in physic, chemistry, &c., after they have passed Surgeon's Hall; he has also the examination of all the surgeon's journals. The commissioner's power is united in the appointment of all officers within the limits of the board, which has an immediate intercourse with the Admiralty Board.

*Regulations for sick and hurt seamen on board our own ships.*—In every ship convenient room must be made between decks for the reception of sick and hurt seamen, who are placed under the immediate care of the surgeon, or assistant where no surgeon is allowed, who visits them twice a day, or oftener if occasion requires. The captain is to appoint some of the ship's company, by turns, to serve the sick night and day, and keep the place clean, to be washed with vinegar, and fumigated if the surgeon shall deem it necessary.

By orders from the captain, the cooper may make buckets out of the old staves and hoops; and the carpenter cradles for the use of the sick, and those who have fractured bones. When men are taken ill with infectious fevers, they are to be stripped at their entry into the sick birth, and, if practicable, washed with soap and warm water; their clothes are also to be immersed and washed in boiling water, in order to destroy infection, and the strictest attention must be paid to the cleanliness of the patient. The surgeon is also to direct in regulating the diet of the sick, according to their several symptoms and disorders, restricting salted provisions, and such articles as he may judge improper; in cases where wine is required, he is to apply to the captain, that the purser may supply them with the quantity he shall judge necessary. When fish is caught for the ship's company, he is to give the captain a list of the men who stand

most in need of such refreshment, that they may be the first attended to.

*Regulations for sending sick and hurt seamen from their ships for cure.*—Sick men are never to be sent to hospitals, neither attending the ship nor on shore, except when their distempers or hurts render it inconvenient to keep them on board their own ships. In that case they must be sent under the charge of an officer and a surgeon's assistant, as the case may require, with their clothes, bedding, and a sick ticket, expressing their names, entry, and number on the ship's books, with a case from the surgeon particularising the previous symptoms and treatment which he or his assistant has experienced and adopted. An officer is never to be sent to an hospital except in cases of urgency, without the approbation of the commander-in-chief, who is to direct the captains to visit the hospitals, and enquire into the conduct of the medical attendants, &c., and to attend to any complaints the patients may have to make. The commander-in-chief, or senior-officer present, must occasionally visit the hospital when other duties will admit of it. The captain is to send an officer on discharging days, to receive such men as are recovered, and to take an account of such as are dead, discharged, &c.

When any are discharged from sick-quarters, and do not return to their ship in twenty-eight days, a D.S.Q. is placed against their names, in order to stop their pay. Captains are to receive such men as the agent of an hospital shall send to them; and if they think them unserviceable, they are to apply for their being surveyed. Slop clothes are not to be issued to any man during his continuance in sick-quarters, unless when it is absolutely necessary, and then they must be entered in the ship's books to be charged against his wages. When ships are in a foreign port where there is not a naval hospital, nor any person appointed by the commissioners for sick and wounded seamen, when necessity requires, the commander-in-chief, senior officer, or captain present, must cause tents to be made for their reception with the old sails of the ship, and appoint the best qualified surgeon in the squadron, &c., to attend them. But, if the raising of tents and the attendance of surgeons be impracticable, the commander-in-chief, &c., may contract with proper persons to supply the sick with lodgings, provisions, &c.; and to appoint some well-qualified medical man or surgeon of the place to attend them, who shall be allowed a specified sum for medicines and attendance. With the sick men are sent the usual sick-tickets, which the surgeon is never to deliver to them, but is to send them to the captain of the ship into which they may be discharged; and he is to receive from the captain a certificate of the day on which the men are sent on board.

*Sick-List* (Fr. *état des malades*), a list containing the names of all those who are unable to do duty in the ship, is daily sent up by the surgeon to the captain, for his inspection and guidance.

*SICKER, adj.* Welsh, *siccwr*; Belg. *seker*. Sure; certain; firm. Obsolete.

*Sicker thou's but a lazy loord,  
And rekes much of thy swink,*

That with fond terms and witless words  
To bleer mine eys dost think. *Spenser.*  
Being some honest iurate or some vicar,  
Content with little, in condition sicker.

*Hubberd's Tale.*

*SICK'LE, n.s.* Sax. *ricol*; Belg. *sickel*, of Lat. *secule* or *sicula*. The hook with which corn is cut; a reaping hook.

The *sicklers* reap the corn another sows, *Sandys*.  
God's harvest is even ready for the sickle, and all the fields yellow long ago. *Spenser on Ireland.*

You sunburnt *sicklemen* of August weary,  
Come hither from the furrow, and be merry.

*Shakspeare.*

Time should never,  
In life or death their fortunes sever;  
But with his rusty *sickle* mow  
Both down together at a blow. *Hudibras.*  
O'er whom Time gently shakes his wings of down,  
Till with his silent *sickle* they are mown. *Dryden.*

When corn has once felt the *sickle*, it has no more benefit from the sunshine. *South's Sermons.*

*SICKLE.* The same instruments are denominated sickles and hooks. Some of them are also used in one part of the country and some in another.

The common sickle is a sort of semicircular piece of wrought iron faced with steel, which in general is from about twenty to thirty inches in length, and about half an inch in breadth, having a sharp toothed edge cut in the steel part, from twenty-six to thirty teeth being formed in every inch in length. The teeth all incline towards the handle of the tool, so that it only cuts when it is drawn towards the person using it, and not when introduced through the standing corn in the act of reaping. The Furgess sickle, a valuable tool of this kind, made use of in a district of that name in the northern part of Lancashire, has a blade two feet six inches long, edged with fifteen teeth in every inch, and in the span of its curvature measures two feet from the heel to the point. It is a powerful tool, and capable of doing much work in a given time when in good hands, as seen below.

The smooth-edged sickle, or reap hook, has a shape and length which are much the same as those in the common sickle, only a little broader; but the edge is smooth or sharp, and without teeth.

The badging or bagging sickle, or hook, is a tool of the same kind, but which is a great deal larger and heavier, as well as broader at the point. It can, however, be used with great effect and expedition by those who are accustomed to this mode of reaping.

The sickle-hook is also another tool of this nature, which is made use of in some districts. It is only toothed from about the middle to the point end, by which the waste of grain in cutting is said to be prevented.

The most ancient of these tools is the common sickle, and it is probably on the whole the best of them, though it is getting much out of use in many parts of the country, being now even scarcely known or employed in the counties of Devon, Cornwall, and Somerset, and many other places in the more western districts of the kingdom, having long since given place to the hooks, the reason of which seems to be the greater ease

of performing the work by them, as is commonly supposed, but by no means proved. The sickle is by far the most frugal and economical tool for accomplishing the work with, as causing the least loss of grain.

SICLOS, a town of Hungary, with a castle on a mountain, in which the emperor Sigismund was imprisoned. In 1543 it was betrayed to the Turks by its commander; but in 1664 it was recovered by the Imperialists. It is sixty-four miles south-east of Canischa.

SICON, a town of Cuba, 125 miles west of Havana.

SICORUS, in ancient geography, a river of Hispania Tarraconensis, rising in the Pyrenees. Near it Julius Caesar conquered Afranius and Petreius. See ROME. Lucan iv. 14, 130. Plin. iii. 3. It is now called Segre.

SICULI, an ancient people of Ausonia, who invaded the Sicanians in Sicily, and gave their name to the island, about A. A. C. 1059.

SICULUM FRETUM, the ancient name of the Straits of Messina. See SICILY.

SICYON, an ancient town of Peloponnesus, the capital of Sicyonia. It was taken by Agamemnon, and afterwards by the Heraclidae. It became very powerful at the time of the Achaean League, which the citizens joined, at the persuasion of Aratus. The people are said to have been dissolute and luxurious. Sicyonian shoes were deemed marks of effeminacy. It is now called Basilico.

SICYONIA, a kingdom or province of Peloponnesus, on the bay of Corinth, one of the most ancient and eminent in Greece. Agialeus, the son of Phoroneus, was the first king, who began to reign about A. A. C. 2089, and reigned fifty-two years. This country in its flourishing state gave name to all Peloponnesus. It is fertile, and abounds with corn, wine, olive oil, iron, &c.

SICYONIAN. Of or belonging to Sicyon.

SICYOS, in botany, single-seeded cucumber; a genus of plants belonging to the class of monoeccia, and to the order of syngenesia; and in the natural system ranged under the thirty fourth order, cucurbitaceæ. The male flowers have their calyx quinquepartite, their corolla quinquepartite, and there are three filaments. The female flowers have their calyx and corolla similar; but their style is trifid, and their drupa monosperous. There are three species: 1. *S. angulata*; 2. *S. garcini*, and 3. *S. Laciñata*, which are all foreign plants.

SID, a river of England, in Devonshire, which runs into the English channel at Sidmouth.

SIDA, or SIDE, in fabulous history, the wife of Orion.

SIDA, yellow, or Indian mallow, in botany, a genus of plants belonging to the class of monodelphia, order polyandria; and in the natural system ranging under the thirty-seventh order, columnifera. The calyx is simple and angulated; the style is divided into many parts; there are several capsules, each containing one seed. There are twenty-seven species;

1. *S. Abutilon*. The Chinese make cords of this plant. It delights in water, and may be advantageously planted in marshes and ditches, where nothing else will grow. From experiments

made by the abbé Cavanilles, a Spaniard, inserted in the Mem de l' Acad. Royale, it appears that the plants succeed best when sown in May, and they arrive at perfection in three months and a half. The maceration of the smaller stalks is finished in about fifteen days; of the larger in a month. The strength and goodness of the thread appeared to be in proportion to the perfection of the vegetation and to the distance the plant was kept at from other plants. The fibres lie in strata, of which there are sometimes six; they are not quite straight, but preserve an undulating direction, so as to form a network in their natural positions. Their smell resembles that of hemp; the fibres are whiter, but more dry and harsh than those of hemp. The harshness is owing to a greenish gluten which connects the fibres; and the white color must be always obtained at the expense of having this kind of thread less supple; when of its natural hue, it is very soft and flexible. This description belongs chiefly to the sida: but it will also apply to the malva crispa, Peruviana, and Mauritia. See MALVA. The malva crispa gave, however, the greatest quantity of fibres, and its gluten was most copious. The fibres of the sida abutilon and the malva crispa are the longest and the strongest; those of the Peruviana and Mauritia are the shortest and the weakest. The fibres of those plants which had lost their leaves are less strong, though of equal length with those which had preserved them. 2. *S. Alba*; 3. *Alnifolia*; 4. *Augustifolia*; 5. *Arborea*; 6. *Atrosanguinea*; 7. *Carpifolia*; 8. *Ciliaris*; 9. *Cordifolia*; 10. *Jamaicensis*; 11. *Paniculata*; 12. *Periplocifolia*; 13. *Retusa*; 14. *Rhombifolia*; 15. *Spinosa*; 16. *Triquetra*; 17. *Viscosa*; 18. *Umbellata*; and 19. *Ureas*. These eighteen species have fifteen capsules each 20. *S. Americana*; 21. *Asiatica*; 22. *Crispa*; 23. *Crustata*; 24. *Indica*; 25. *Mauritiana*; 26. *Occidentalis*; and 27. *Ternata*. These eight species, with the Abutilon above described, are all multicapsular. They are all natives of warm climates; and most of them are found in the East or West Indies.

SIDDEE, or SEDEE, an Arabic title, by which the Abyssinians or Habashys are always distinguished in the court of Hindostan; where, being in great repute for firmness and fidelity, they are generally employed as commanders of forts or in posts of great trust.

SID EL COOM, the established legal regicide, or king-killer, in the barbarous kingdom of Sennar. See SENNAAR.

SIDDONS, (Mrs.,) daughter of Roger Kemble, the manager of an itinerant company of players, was born at Brecknock, in South Wales, in 1755. She commenced her theatrical career as a singer, but soon relinquished that line, and attempted tragedy. In her fifteenth year, she conceived a passion for a young man, who was an actor of all work in her father's company; but her parents considering her too young to form a connexion with him, placed her as lady's maid with a lady in Warwickshire. In her eighteenth year, however, she was married to Siddons, with their consent; and the newly-married pair entered into a strolling company. She and her husband played at Liverpool, Birmingham, and other places, gaining both reputa-

tion and profit. *The theatrical character which she had acquired induced the manager of Drury Lane to offer an engagement, which she accepted. It was, however, only in secondary parts that she appeared. But in a short time she quitted the London boards, in consequence of the scurrilous attacks of a disappointed editor of a newspaper, in whose condemned after-piece she had been unlucky enough to perform.* Bath was the next scene of her exertions; and, while there, she improved rapidly, and became a general favourite. *The duchess of Devonshire, then in the zenith of her charms and influence, became her friend; and, through the intervention of that accomplished lady, she was again engaged at Drury lane. The re-appearance of Mrs. Siddons in London took place on the 10th of October, 1782, in the character of Isabella. Her success was complete. The public were astonished by her powers. She was acknowledged to be the first tragic actress of the English stage, and tragedy became fashionable. The manager gave her an extra benefit, and increased her salary. For that benefit she came forward as Belvidera, and at once exalted her fame, and made a considerable increase to her fortune. Such was the delight which she gave, that the gentlemen of the bar subscribed a hundred guineas as a present to her. She subsequently visited Dublin and Edinburgh with equal applause. In 1784, some calumnies circulated against her, with respect to her conduct towards an unhappy sister, occasioned her to meet with an unkind reception from a London audience, and affected her so much, that she resolved to retire from the stage; but the calumnies were speedily refuted, and her resolution was given up. For more than twenty years she continued to astonish and enchant the lovers of the drama; and she was often invited to Buckingham house and to Windsor to read plays to their majesties. But her readings there were rather productive of honour than of profit. The fortune which she had accumulated was, however, large, and for many years she enjoyed it in the privacy of domestic life. It was not only as an actress that Mrs. Siddons displayed talents. She had considerable merit as a sculptor, in which capacity she produced, amongst other things, a medallion of herself, a bust of her brother, John Philip Kemble, in the character of Coriolanus, a study of Brutus before the death of Cæsar, and a bust of president Adams. The symmetry of her person was captivating. Her face was peculiarly happy, having strength of features, but so well harmonized when quiescent, and so expressive when impassioned, that most people thought her more beautiful than she was. So great, too, was the flexibility of her countenance, that it caught the instantaneous transitions of passion with such variety and effect, as never to fatigue the eye. Her voice was plaintive, yet capable of firmness and exertion. Her eye was large; her brow capable of contracting with disdain or dilating with sympathy or pity; and her articulation clear, penetrating, and distinct. So entirely was she mistress of herself, so collected and so determined in her gestures, tone, and manner, that she seldom erred, like other actors, because she doubted her own*

powers of comprehension: she studied her author attentively; she was sparing in action though her acting was the result of the most refined and assiduous attention, no studied trick or start could be predicted; none of those artifices in which the actress is seen, and not the character, could be found in Mrs. Siddons. What was still more delightful, she was an original; she copied no one, living or dead, but acted from nature and herself. Mrs. Siddons, having acquired an ample fortune, took her leave of the stage, in 1812, before an audience which melted into tears on the occasion. She, however, performed in 1816, for the benefit of her brother, Mr. Charles Kemble, and a few nights in Edinburgh, to assist her daughter-in-law. Her greatest characters are well known to have been Catherine, in Henry VIII., and lady Macbeth, in which she manifested a dignity and sensibility rarely equalled. She died June 8th, 1831.—See Boaden's *Memoirs of Mrs. Siddons* (2 vols. 1827.)

SIDE, <i>n. s.</i> , <i>adj.</i> & <i>v. n.</i>	Sax. <i>freo</i> ; Goth. <i>side</i> .
SIDEBOARD, <i>n. s.</i>	<i>side</i> . The rib part of an animal; edge; margin; verge; any part, person, or thing placed in opposition, local or metaphorical, to something else, or some other part or
SIDEBOX,	person; faction; party; interest: as an adjective, side means lateral, indirect, oblique; as a verb neuter, to lean on one side; to take or lean to a party; sidely is an insect: sidelong, synonymous with side, as an adjective; in a lateral direction, which also sideways and sidewise mean: to sidle, to go sideways with another body or thing; also to be on the side: the other compounds seem to explain themselves.
SIDEFLY,	
SIDELONG, <i>adj.</i> & <i>adv.</i>	
SIDE'SADDLE, <i>n. s.</i>	
SIDESMAN,	
SIDEWAYS, <i>adv.</i>	
SIDEWISE,	
SIDLE, <i>v. n.</i>	

Take of the blood, and strike it on the two *side* posts, and on the upper door post, of the houses.

*Exodus xii. 7.*

The tables were written on both their *sides*, on the one *side* and on the other. . . . *Id. xxxii. 15.*

When two boars with rankling malice meet,  
Their gory *sides* fresh bleeding fiercely rent.

*Faerie Queene.*

They presume that the law doth speak with all indifference, that the law hath no *side* respect to their persons. *Hooker.*

There began a sharp and cruel fight, many being slain and wounded on both *sides*.

*Knolles's History of the Turks.*

Vexed are the nobles who have *sided*  
In his behalf. *Shakspeare. Coriolanus.*

Their weapons only  
Seemed on our *side*; but for their spirits and souls,  
This word rebellion it had froze them up,  
As fish are in a pond. *Id. Henry IV.*

All rising to great place is by a winding stair;  
and if there be factions, it is good to *side* a man's self whilst rising, and balance himself when placed. *Bacon.*

The princes differ and divide,  
Some follow law, and some with beauty *siae*.  
*Granville.*

What natural agent could turn them aside, could  
impel them so strongly with a transverse *side* blow

against that tremendous weight and rapidity, when whole worlds are a-falling? *Bentley's Sermons.*

He not only gives us the full prospects, but several unexpected peculiarities, and *side* views, unobserved by any painter but Homer.

*Pope's Preface to the Iliad.*

All *side* in parties, and begin the attack. *Pope.*

He from the taste obscene reclaims our youth,  
And sets the passions on the *side* of truth;  
Forms the soft bosom with the gentlest art,  
And pours each human virtue in the heart. *Id.*

Why round our coaches crowd the white-gloved  
*beaux?*

Why bows the *sidobox* from its inmost rows? *Id.*

Those who pretended to be in with the principles upon which her majesty proceeded, either absented themselves where the whole cause depended, or *sided* with the enemy. *Swift.*

My secret enemies could not forbear some expressions, which by a *side* wind reflected on me. *Id.*

The chaffering with dissenters is but like opening a few wickets, and leaving them a-jar, by which no more than one can get in at a time, and that not without stooping and *sidling*, and squeezing his body. *Swift.*

Ere the soft fearful people to the flood

Commit their woolly *sides*. *Thomson.*

The kiss snatched hasty from the *sidelong* maid. *Id.*

Two nations still pursued

Peculiar ends, on each *side* resolute

To fly conjunction. *Philips.*

SIDERAL, *adj.* Lat. *siderus*, a star. Starry; *Siderated*, astral: siderated is blasted

SIDERATION, *n.s.* (supposed by the stars); planet-struck: the noun substantive corresponding.

These changes in the heavens, though slow, produced

Like change on sea and land: *sideral* blast,  
Vapour and mist, and exhalation hot,  
Corrupt and pestilent! *Milton's Paradise Lost.*

Parts cauterized, gangrenated, *siderated*, and mortified, become black; the radical moisture, or vital sulphur, suffering an extinction.

*Browne's Vulgar Errors.*

The contagious vapor of the very eggs produces a mortification or *sideration* in the parts of plants on which they are laid. *Ray on the Creation.*

The musk gives

Sure hopes of racy wine, and in its youth,  
Its tender nonage, loads the spreading boughs  
With large and juicy offspring, that defies  
The vernal nippings and cold *sideral* blasts. *Philips.*

SIDERATIO. See NECROSIS.

SIDEREAL, or SIDEREAN, from Latin *side-reus*, starry. Of or belonging to the stars; like a star; starry; the same with sideral, but more used, as well as siderial.

SIDERIA, in the old system of mineralogy, a genus of crystals, used to express those altered in their figure by particles of iron. These are of a rhomboidal figure, and composed only of six planes. Of this genus three species were enumerated: 1. A colorless, pellucid, and thin one; found in considerable quantities among the iron ores of the forest of Dean in Gloucestershire, and in several other places. 2. A dull, thick, and brown one; not uncommon in the same places with the former. And, 3. A black and very glossy kind, a fossil of great beauty; found in the same places, also in Leicestershire and Sussex.

SIDERIAL, or SIDEREAL. See SIDEREAL.

SIDERIAL DAYS. See ASTRONOMY, Index.

SIDERIAL YEAR. See ASTRONOMY, Index.

SIDERITIS, iron-wort, in botany, a genus of plants belonging to the class of didynamia, and to the order of gymnospermia; and in the natural system ranging under the forty-second order, verticillatae. The stamens are within the tube of the corolla. There are two stigmas, one of which is cylindrical and concave; the other, which is lower, is membranous, shorter, and sheathing the other. The species are fifteen. 1. S. Canariensis, the Canary iron-wort, is a native of Madeira and the Canary Islands; 2. S. candicans, the whitish iron-wort, is also a native of Madeira; 3. S. ciliata, the ciliated, or hairy iron-wort; 4. S. elegans, the elegant iron-wort; 5. S. hirsuta, the rough iron-wort, is indigenous in the south parts of Europe; 6. S. hyssopifolia, the hyssop-leaved iron-wort, is a native of Italy and the Pyrenees; 7. S. incana, the hoary iron-wort, is a native of Spain; 8. S. lanata, the woolly iron-wort; 9, S. montana, the mountain iron-wort, is a native of Italy and Austria; 10. S. perfoliata, the full-leaved iron-wort, is a native of the Levant; 11. S. Romana, the Roman iron-wort, is a native of Italy; 12. S. scordioides, the Germanander iron-wort, a native of the south of France; 13. S. Syriaca, Syrian iron-wort, a native of the Levant.

SIDEROXYLON, iron-wood, in botany, a genus of plants belonging to the class of pentandria, and to the order of monogynia; and in the natural system ranging under the forty-third order, dumasæ. The corolla is cut into ten parts, the laciniae or segments being incurvated alternately; the stigma is simple; the berry contains five seeds. There are ten species: 1. S. cymosum, the sproutful iron-wood, a native of the Cape of Good Hope; 2. S. decandrum, the ten-chived iron-wood, has ten stamens; 3. S. foetidissimum, the stinking iron-wood, is a native of the Cape of Good Hope; 4. S. inerme, smooth iron-wood, in this country requires a warm stove; 5. S. lycoides, the willow-leaved iron-wood, is a native of North America; 6. S. melanophelum, laurel-leaved iron-wood; 7. S. mite, the mild iron-wood, requires a warm stove in this country; 8. S. siricium, silky iron-wood, is a native of New South Wales; 9. S. spinosum, thorny iron-wood, or argan, is a native of Morocco; 10. S. tenax, silvery-leaved iron-wood, is a native of Carolina. The wood of these trees, being very close and solid, has given occasion for this name to be applied to them, it being so heavy as to sink in water. As they are natives of warm countries, they cannot be preserved in this country unless they are placed in a greenhouse. They are propagated by seeds procured from abroad.

SIDERUM, the name first given by Sir T. Bergman to the phosphuret of iron, which he took to be a new metal. See PHOSPHURET.

SIDLA, SIDLAW, or SIDLEY HILL, the principal and the highest of the Sidlaw Hills, which gives name to the whole ridge, is 1406 feet above the level of the sea.

SIDLA, SIDLAW, SIDLEY, or SUDLAW HILLS, a ridge of hills of Scotland, extending from west to east, through the counties of Perth and For-

far, commencing at Kinnoul and terminating near Brechin. This ridge stands on the south side of the valley of Strathmore, and is so named from its situation; *sud-laws*, in the Gaelic language, signifying south hills. The mountains are of various heights. Next to Sidlaw, the highest, are King's Seat, Kinpurnie, and Dundinna.

SIDMOUTH, a market-town in the hundred of East-Budleigh, Devonshire, situate at the mouth of the small river Sid, near the sea, twelve miles south-east of Exeter, and 158 west by south from London. It was anciently a considerable sea-port, but its harbour has long since been choked with sand. Of late years it has been much frequented as a watering-place, and is much improved. It has an elegant ball-room, and on the beach a commodious tea-room and shade. The town stands between two hills, and although open to the ocean, is entirely free from fogs, so that it is esteemed a very healthy as well as pleasant situation. Markets on Tuesday and Saturday. Fairs Easter Monday and Tuesday, and the third Monday in September. It is a vicarage, value £18. 15s. 5d.

SIDNEY (Sir Philip), was born at Penshurst, in Kent, in 1554; his father was Sir Henry Sidney, an Irish gentleman, and his mother Mary, the eldest daughter of John Dudley, duke of Northumberland. He was sent when very young to Christ-church College at Oxford, but left the university at seventeen to set out on his travels. After visiting France, Germany, Hungary, and Italy, he returned to England in 1575, and was next year sent by queen Elizabeth as her ambassador to Rodolph II. emperor of Germany. On his return he visited Don John of Austria, governor of the Netherlands, and was received with great respect. In 1579, when queen Elizabeth seemed on the point of concluding her long-projected marriage with the duke of Anjou, Sir Philip wrote her a letter, in which he dissuaded her from the match with unusual elegance of expression, as well as force of reasoning. About this time a quarrel with the earl of Oxford occasioned his withdrawing from court; during which retirement he is supposed to have written his celebrated romance, called *Arcadia*, which is so often quoted by Dr. Johnson in his dictionary. In 1583, after the queen's treaty with the United States, he was made governor of Flushing and master of the horse. Here he distinguished himself so much that his reputation rose to the highest pitch. He was named, it is said, by the republic of Poland, as one of the competitors for that crown, and might even have been elected, had it not been for the interference of the queen. But his illustrious career was soon terminated; for in 1586 he was wounded at the battle of Zutphen, and carried to Arnhem, where he soon after died. His body was brought to London, and buried in St. Paul's Cathedral. He is described by the writers of that age as the most perfect model of an accomplished gentleman that could be formed, even by the wanton imagination of poetry or fiction. Virtuous conduct, polite conversation, heroic valor, and elegant erudition, all concurred to render him the ornament and delight of the English court; and, as the credit

which he enjoyed with the queen and the earl of Leicester was wholly employed in the encouragement of genius and literature, his praises have been transmitted with advantage to posterity. No person was so low as not to become an object of his humanity. After the battle of Zutphen, when he was lying on the field, mangled with wounds, a bottle of water was brought him to relieve his thirst; but, observing a soldier near him in a like miserable condition, he said, 'This man's necessity is still greater than mine,' and resigned to him the bottle of water. Besides his *Arcadia*, he wrote several smaller pieces both in prose and verse, which have been published.

SIDNEY (Algernon), the celebrated English patriot, was the second son of Robert earl of Leices-ter, and Dorothy, eldest daughter of the earl of Northumberland. He was born about 1617. During the civil wars he took part against the king, and distinguished himself as a colonel in the army of the parliament. He was afterwards appointed one of king Charles's judges, but declined appearing in that court. During the usurpation of Cromwell, Sidney, who was a violent republican, retired to the country, and spent his time in writing those discourses on government which have been so deservedly celebrated. After the death of the protector, he again took part in the public transactions of his country, and was abroad on an embassy to Denmark, when king Charles was restored. Upon this he returned to Hamburgh, and afterwards to Frank-fort, where he resided till 1677, when he returned to England, and obtained from the king a pardon. After his return he made repeated attempts to procure a seat in parliament, but all of them proved unsuccessful. After the intention of the commons to seclude the duke of York from the throne had been defeated by the sudden dissolution of parliament, Sidney joined with eagerness the councils of Russel, Essex, and Monmouth, who had resolved to oppose the duke's succession by force of arms. Frequent meetings were held at London; while, at the same time, a set of subordinate conspirators, who were not, however, admitted into their confidence, met and embraced the most desperate resolutions. Keiling, one of these men, discovered the whole conspiracy; and Algernon Sidney, together with his noble associates, was immediately thrown into prison, and no art was left unattempted to involve them in the guilt of the meaner conspirators. Howard, an abandoned nobleman, without a single spark of virtue or honor, was the only witness against Sidney; but, as the law required two, his Discourses on Government, found unpublished in his closet, were construed into treason, and declared equivalent to another witness. It was in vain for Sidney to plead that papers were no legal evidence; that it could not be proved they were written by him; and that, if they were, they contained nothing treasonable. The defence was over-ruled; he was declared guilty, condemned, and executed on the 7th December, 1683. His attainder was re-versed in the first year of king William. He was a man of extraordinary courage, steady even to obstinacy; of a sincere but rough and boisterous temper. Though he professed his belief in

the Christian religion, he was an enemy to an established church, and even, according to Burnet, to every kind of public worship. In his principles he was a zealous republican; government was always his favorite study, and his essays on that subject are a proof of the progress which he made.

SIDON, in ancient geography, a city of Phoenicia, in Asia, famous in Scripture for its riches, arising from the extensive commerce carried on by its inhabitants. Heavy judgments were denounced against the Sidonians on account of their wickedness, which were accomplished in the time of Artaxerxes Ochus, king of Persia; for that monarch having come against them with an army, on account of their rebellion, the city was betrayed by its king; upon which the wretched inhabitants were seized with despair; they set fire to their houses, and 40,000, with their wives and children, perished in the flames. This city is now called Saïde; and, according to Bruce's account, not only its harbour is filled up with sand, but the pavement of the ancient city stood seven feet and a half lower than the ground on which the present city stands. Volney describes it as an ill-built dirty city. See SAIDE.

SIDONIA, an epithet of Dido (Ovid. Met. xiv. 80); also of Carthage, because built by Sidonians.—Virg. Aen. 1, v. 682.

SIDONIAN, of or belonging to Sidon.

SIDONIANS, the people of Sidon. They were extremely ingenious in arts and manufactures, and were particularly famous for embroidery and dyeing.

SIDONIORUM INSULE, in ancient geography, islands in the Gulf of Persia.—Strabo, xvi.

SIDONIS, an ancient country of Asia, in the west of Syria, or Phoenicia, on the coast of the Mediterranean. Sidon was the capital.

SIDONIUS, APOLLINARIS. See APOLLINARIS.

SIDRA, an extensive gulf in the eastern part of the territory of Tripoli, in the interior of which are extensive quicksands, celebrated in antiquity under the appellation of Syrtis, from a corruption of which the modern name is derived. It extends from long.  $15^{\circ} 30'$  to  $19^{\circ} 30'$  E., and from lat.  $30^{\circ} 30'$  to  $32^{\circ} 30'$  N.

SIDUS GEORGIIUM, in astronomy, a name sometimes given to the primary planet, discovered by Dr. Herschell in 1781. By most foreign, and some British philosophers, it is named Herschell. See ASTRONOMY, Index.

SIEGE, n.s. & v.a. Fr. *siege*; qu. Lat. *sedis*? The act of besetting a fortified place; a leaguer; a seat; throne; stool; place: to besiege (obsolete).

Drawing to him the eyes of all around,  
From lofty *siege* began these words aloud to sound.

*Faerie Queene.*

Him he had long opprest with tort,  
And fast imprisoned in *sieged* fort. *Id.*

It seemed, by the manner of their proceeding, that the Turks purposed rather by long *siege* than by assault to take the town.

*Knoller's History of the Turks.*

Our castle's strength

Will laugh a *siege* to scorn: here let them lie,  
Till famine eat them up. *Shakspeare. Macbeth.*

Beat away the busy meddling fiend,  
That lays strong *siege* unto this wretch's soul,

*Vot. XX.*

And from his bosom purge this black despair.

*Id. Henry VI.*

Give me so much of your time, in exchange of it,  
As to lay an amiable *siege* to the honesty of Ford's wife.

*Shakspeare.*

I fetch my life and being  
From men of royal *siege*. *Id. Othello.*

Your sum of parts

Did not together pluck such envy from him,  
As did that one, and that in my regard  
Of the unworthiest *siege*.

*Id. Hamlet.*

The more I see

Pleasures about me, so much more I feel  
Torment within me, as from the hateful *siege*  
Of contraries. *Milton's Paradise Lost.*

It entereth not the veins, but taketh leave of the  
permeant parts, as the mouths of the meseraicks, and  
accompanieth the inconvertible portion unto the  
*siege*. *Browne's Vulgar Errours.*

Love stood the *siege*, and would not wile his  
breast. *Dryden.*

SIEGE. The first operation of a *siege*, says colonel James, is investing. The body of troops investing a town should at least be as strong again as the garrison; so as to be able to divide itself into several parties, in order to take possession of all the avenues leading to the place. By day they should keep themselves out of cannon-shot; but, as soon as it is dusk, they must approach much nearer, the better to be able to support each other, and to straiten the town.

To undertake the *siege* of a town (entreprendre le *siege* d'une ville Fr.), to invest it, to form lines of circumvallation, to open trenches, &c.

To lay *siege* to a town (faire le *siege* d'une ville, Fr.), to draw your forces round a town for the purpose of attacking it.

To carry on a *siege* (continuer un *siege*, Fr.), to persevere by regular approaches, &c., in gaining ground upon the garrison.

To lay close *siege* (presser le *siege*, Fr.), to approach close to the walls for the purpose of making a breach and storming, or of starving out the garrison. For a full and scientific explanation of the different methods which are adopted in modern times, for the attack and defence of places, particularly of sieges, see *Essai Général de Fortification et d'attaque et défense des places*, tom. i. page 61, &c. &c.

General phrases and terms used at a *siege* are, viz.:—*To besiege a place*. See SIEGE.

*To accelerate the siege* (accélérer *siege*, Fr.) is when an army can approach so near the place as the covert-way, without breaking ground, under favor of some hollow roads, rising grounds, or cavities, and there begin their work.

*An attack* is when the besieging army can approach the town so near as to take it, without making any considerable works.

*To form the siege, or lay siege to a place* (mettre le *siege* à une place, Fr.), there must be an army sufficient to furnish five or six reliefs for the trenches, pioneers, guards, convoys, escorts, &c., and artillery, with all the apparatus thereto belonging; magazines furnished with a sufficient quantity of all kinds of warlike stores; and a general hospital, with physicians, surgeons, medicines, &c.

*To raise the siege* (lever le *siege*, Fr.) is to give over the attack of a place, quit the works

X

thrown up against it, and the posts formed about it. If there be no reason to fear a sally from the place, the siege may be raised in the day time. The artillery and ammunition must have a strong rear guard, lest the besieged should attempt to charge the rear: if there be any fear of the enemy in front, this order must be altered discretionally, as safety and the nature of the country will admit.

*To turn the siege into a blockade* (convertir le siège en blocus, Fr.) is to give over the attack and endeavour to take it by famine; for which purpose all the avenues, gates, and streams, leading into the place, are so well guarded that no succor can get in to its relief.

*To insult a work*, to attack it in a sudden and unexpected manner, with small arms, or sword in hand.

*Surprise*, the taking a place by a coup de main, by stratagem, or treason.

*To escalade a place*, to approach it secretly, then to place ladders against the wall or rampart, for the troops to mount and get into it that way.

*To petard a place*, privately to approach the gate, and fix a petard to it, so as to break it open for the troops to enter.

*Line of circumvallation*, a kind of fortification, consisting of a parapet or breast-work, and a ditch before it, to cover the besiegers against any attempt of the enemy in the field.

*Line of contravallation*, a breast-work, with a ditch before it, to cover the besiegers against any sally from the garrison, in the same manner that the line of circumvallation serves to protect them in the field.

*Lines*, works made to cover an army, so as to command a part of the country, with a breast-work and ditch before them.

*Retrenchment*, a work made round the camp of an army, to cover it against any surprise.

*Line of counter-approach*, a trench which the besieged make from the covert-way to the right and left of the besieger's attacks, in order to scour their works. This line must be perfectly enfiladed from the covert-way and the half moon, &c., that it may be of no service to the enemy, in case he gets possession of it.

*Batteries* at a siege cannot be erected till the trench is advanced within reach of the cannon of the place; that is, within what is generally understood to be a point-blank range, which is reckoned about 300 toises, 1800 feet.

*Cannon* is made use of at a siege for two different purposes; the first to drive away the enemy from their defences; and the second to dismount their guns. To produce these two effects, the batteries should not be above the mean reach of cannon shot from the place: therefore there is no possibility of constructing them till the first parallel is formed, as that work is usually traced at 300 toises from the place: therefore the batteries must be on this line, or between it and the town.

The completion of the batteries is in some services left to the officers of the royal artillery, after the engineers have thrown up the mass of cover; but in the British service the engineers finish every part of them. They must be parallel

to the works of the town which they are to batter. It is customary to place the mortar-batteries and gun-batteries side by side, and in the same line, to the end that they may batter the same parts. The use of both is to demolish the enemy's works, to dismount their guns, to penetrate into their powder magazines, and to drive the besieged from their works and defences; as also to ruin and destroy the principal buildings, by setting fire to the town; and to fatigue and distress the inhabitants in such a manner that they shall press the garrison to surrender.

*To sally at a siege* is to go privately out of a besieged town, fall suddenly upon the besiegers, and destroy part of their works, spike their cannon, and do every other possible damage.

*A sally*, a secret movement which is made out of a besieged town or place, by a chosen body of troops, for the purpose of destroying an enemy's outworks, &c. Sallies are seldom made when the garrison is weak; for although they molest the enemy, and keep him on the alert, yet the chance of losing men renders it prudent to keep within the works.

*Saps* *To sap at a siege* is the method of carrying on the approaches when so near the place as to be unable to work without cover. It is performed by men on their knees behind a mantlet or stuffed gabion: they make the sap three feet deep, and three feet six inches wide; then common workmen widen it to the usual size, and it bears the name of trench. There are various sorts of saps, viz.

*Single sap*, that which is made on one side only, or, which is the same thing, has only one parapet.

*Double sap* has a parapet on each side, and is carried on wherever its two sides are seen from the place.

*Flying sap* is that in which the working parties of the besiegers place their gabions themselves, and instantly fill them with earth, and continue to work under their cover: it is made where the workmen are not much exposed, and in order to accelerate the approaches.

*Sup-faggots* are a kind of fascines, only three feet long, and about six inches in diameter.

*Saucissons* are another species of fascines, from twelve to nineteen feet long, and from eight to ten inches in diameter, and are used in making batteries, and repairing the breaches.

*Sortie*. See *Sally*.

*Tail, or rear of the trench* (queue de la tranchée, Fr.), is the first work the besiegers make when they open the trenches.

*Tambour*, a kind of traverse, at the upper end of the trench, or opening made in the glacis to communicate with the arrows. This work hinders the besiegers from being masters of the arrow, or discovering the inside of the place of arms belonging to the covert-way.

*Traverse* in a siege, a kind of retrenchment, which is made in the dry ditch, to defend the passage over it.

*Trenches* are passages or turnings dug in the earth, in order to approach a place without being seen from its defences.

*Woolpacks* used in a siege differ from sandbags in this only, that they are much larger, and

instead of earth, they are filled with wool. They are used in making lodgments in places where there is but little earth, and for other similar purposes. They are about five feet high and fifteen inches in diameter.

*Rear of an attack* is the place where the attack begins.

*Front, or head of an attack*, that part next to the place

*Mantlets* are wooden fences, rolling upon wheels, of two feet diameter; the body of the axle-tree is about four or five inches square, and four or five feet long; to which is fixed a pole of eight or ten feet long, by two spars: upon the axle-tree is fixed a wooden parapet, three feet high, made of three-inch planks, and four feet long, joined with dowel-pins, and two cross-bars: this parapet leans somewhat towards the pole, and is supported by a brace, one end of which is fixed to the pole, and the other to the upper part of the parapet. Mantlets are used to cover the sappers in front against musket-shot.

*Maxims in sieges*, 1. The approaches should be made without being seen from the town, either directly, obliquely, or in flank.

2. No more works should be made than are necessary for approaching the place without being seen; i. e. the besiegers should carry on their approaches the shortest way possible, consistent with being covered against the enemy's fire.

3. All the parts of the trenches should mutually support each other; and those which are farthest advanced should be distant from those that defend them about 120 or 130 toises, that is, within musket-shot.

4. The parallels, or places of arms the most distant from the town, should have a greater extent than those which are the nearest, that the besiegers may be able to take the enemy in flank, should he resolve to attack the nearest parallels.

5. The trench should be opened or begun as near as possible to the place, without exposing the troops too much, in order to accelerate and diminish the operations of the siege.

6. Care should be taken to join the attacks; that is, they should have communications, to the end that they may be able to support each other.

7. Never to advance a work, unless it be well supported; and for this reason, in the interval between the second and third place of arms, the besiegers should make on both sides of the trenches smaller places of arms, extending forty or fifty toises in length, parallel to the others, and constructed in the same manner, which will serve to lodge the soldiers in, who are to protect the works designed to reach the third place of arms.

8. Take care to place the batteries of cannon in the continuation of the faces of the parts attacked, in order to silence their fire; and to the end that the approaches, being protected, may advance with greater safety and expedition.

9. For this reason, the besiegers should always embrace the whole front attacked, in order to have as much space as is requisite to place the batteries on the produced faces of the works attacked.

10. Do not begin the attack with works that lie close to one another, or with reentrant angles, which would expose the attack to the cross-fire of the enemy.

Stores required for a month's siege are nearly as follow:—

	lbs.
Powder, as the garrison is	
more or less strong . . . . .	800,000 or 900,000
Shot { for battering pieces . . . . .	6000
Shot { of a lesser sort . . . . .	20,000
Battering cannon . . . . .	80
Cannons of a lesser sort . . . . .	49
Small field pieces for defending the lines . . . . .	20
Mortars for throwing { shells . . . . .	24
Shells for mortars . . . . .	12
Hand-grenades . . . . .	15,000 or 16,000
Leaden bullets . . . . .	40,000
Matches in braces . . . . .	180,000
Flints for muskets, best sort . . . . .	10,000
Platforms complete for guns . . . . .	100
Platforms for mortars . . . . .	60
{ carriages for guns . . . . .	60
Spare { mortar beds . . . . .	60
{ sponges, rammers, and la-	
dles, in sets. . . . .	20
Tools to work in trenches . . . . .	40,000

Several hand-jacks, gins, sling-carts, travelling forges, and other engines proper to raise and carry heavy burdens; spare timber, and all sorts of miners' tools, mantlets, studded gabions, fascines, pickets, and gabions.

*Siege busqué*, Fr., an expression used among the French to signify the prompt and immediate movement of a besieging army, against a fortified town or place, without waiting for the regular formation of lines, &c. In this case the troops make a vigorous attack upon all the outworks, and endeavour to make a lodgment upon the counterscarp. When they have succeeded, they instantly throw up temporary lines, &c., behind them, in order to secure a retreat, should the garrison force them to quit their ground.

The following are some of the most important sieges from the twelfth century to the year 1815.

Acre, 1192; 1799, by Buonaparte.—The siege raised after sixty days' open trenches.

Agrigento, 1566, 1687.

Aiguillon, 1345.

Alba Regalis (Stulweissenberg), 1543, 1601, 1602, 1688.

Alicantara, 1706.

Alessandria (Italy), 1801.

Algiers, besieged by an armament from Charles

V. of Spain, in 1541.—Bombarded by order of Louis XIV., in 1682, on which occasion bomb vessels were first employed by a French engineer of the name of Renan.—Bombarded again in 1683; again in 1689, by the French; and finally by lord Exmouth on the 27th day of August, 1816.

Algesiras, 1341.

Alhama, 1481.

Alkmaar, 1573.

Almeida, August 27th, 1810.—Lost by the accidental explosion of the principal magazine, and the after-treachery of major Jose de Barreiros, the Portuguese artillery commander.

- Amiens, 1597.  
 Ancona, 1799.  
 Angely (St. Jean d'), 1569, 1621.  
 Angoulême, 1345.  
 Antequera, 1410.  
 Antwerp, 1576, 1583; 1585, use of infernal machines; 1706, 1792, 1814.  
 Aretino, 1800.  
 Arras, 1414.  
 Arisch (El), 1800.  
 Astorga, April 12th, 1810.  
 Azoff, 1736.  
 Asti, 1745, 1746.  
 Atella, 1496.  
 Ath, 1697, 1700; 1745.—First general adoption of firing with artillery à ricochet, at a siege.  
 Avignon, 1226.  
 Badajoz, March 11th, 1811; besieged by lord Wellington in May, the siege raised; a second time during May and June, again raised June 9th, from an insufficiency of means; besieged by his lordship, the third time, in 1812, and taken by escalade on the night of April 6th. If the British had failed, in this last attempt, the army must have gone back to the lines of Torres Vedras.—Remark.—After twenty days' open trenches, three breaches were made; the assault of these failed, while an attack of the same walls by escalade succeeded.—Such were the exertions, and so daring was the intrepidity of the British troops during the escalade, particularly that made by general Leith, and the late lamented Sir Thomas Picton, K. B., that a few years hence they will scarcely obtain belief.  
 Bagdad, 1248.  
 Barcelona, 1697, 1705, 1706, 1714.  
 Bastia, 1511, 1793.  
 Bayonne, 1451.  
 Beauvais, 1472.  
 Belgrade, 1439, 1455, 1521, 1688, 1690, 1717, 1739, 1789.  
 Bellegarde, 1793, 1794.  
 Belle-Isle, April 7th, 1761.  
 Belvedere (Calabria), 1289.  
 Bene, 1551, 1795.  
 Bergerac, 1345.  
 Bergen-op-zoom, 1588, 1622, 1747, 1814.—During one of the most obstinate sieges against this strong place, the Dutch, from the prevalence of a thirst for lucre, actually sold gunpowder and other materials to enable the enemy to destroy their own property.  
 Berwick, 1293.  
 Besançon, 1668, 1674.  
 Bethune, 1710.  
 Blisecastel, 1674, 1794.  
 Bois-le-duc, 1603, 1629, 1794.  
 Bologna, 1512, 1796.  
 Bommel, 1599, invention of the covert-way; 1794.  
 Bonifacio, 1553.  
 Bonn, 1587, 1689, 1703.  
 Bordeaux, 1451, 1452, 1653.  
 Bouchain, 1676; 1711,—last seige of the duke of Marlborough.  
 Boulogne, 1545.  
 Bourbon (Pt.), Martinique, 1794; 18—Taken and blown up.  
 Bourges, 1412.  
 Braunau, 1744, 1805.  
 Breda, 1590, 1625, 1793, 1794.  
 Brescia, 1439, 1512, 1796, 1799.  
 Breslaw, 1741, 1757, 1759; January 8th, 1807.  
 Brest, 1373.  
 Brieg, 1741, 1806, 1807.  
 Brisac, 1638, 1703, 1704.  
 Brussels (bombardment), 1695, 1746.  
 Buda, 1526, 1528, 1541, 1684, 1686.  
 Burgos (Castle of), September 19th, to October 22d, 1812.—The siege of this insignificant place was raised from the want of sufficient means of attack—there not being a miner, a sapper, hardly an artificer in the attacking party.—The fortifications were blown up by the French in 1813, in their retreat, June 13th.  
 Cadiz, February 10th, 1810, raised August 12th, 1812, in consequence of the defeat of Marmont at the battle of Salamanca.  
 Caen, 1346, 1450.  
 Calais, 1347, starved into a surrender by Edward III.; 1436, 1558, 1596.  
 Calvi (Corsica), 1794.  
 Campo-Mayor, March 23d, 1811; April 15th.  
 Candia, 1667 to 1669.—The largest cannon at that time known in Europe cast by the Turks in their camp.—Parallels to support the approaches, invented by an Italian engineer, first used.  
 Capua, 1501.  
 Carignan, 1544.  
 Carthagena, 1706.  
 Casal, 1534, 1629, 1630.  
 Cassel, 1328.  
 Cassel (Hesse), 1761.  
 Castillon, 1452, 1586.  
 Ceuta, 1790.  
 Chalus, 1199.—Death of Richard Cœur-de-Lion.  
 Charleroi, 1672, 1677, 1693, 1736, 1794.  
 Chartres, 1568, 1591.  
 Château-gaillard, 1203, 1418.  
 Chaves, March 25th, 1809.  
 Cherbourg, 1450.  
 Chincilla, October 30th, 1812.  
 Chio, 1346.  
 Ciudad Rodrigo, 1706; July 10th, 1810; January 19th, 1812.  
 Colberg, 1760, 1761, 1807.  
 Colchester, 1645.  
 Colliouri, 1794.  
 Compiegne, 1430.—Joan of Arc taken prisoner.  
 Condé, 1676, 1792, 1794.  
 Coni 1691, 1744.  
 Constantinople, 1453.  
 Copenhagen, 1700, 1801; September 1807.  
 Corbeil, 1590.  
 Corfu, 1715.  
 Courtrai, taken and re-taken twenty times, from 1302 to 1800.  
 Cracow, 1772.  
 Cremona, 1702.—Surprised by prince Eugene who carried off marshal Villeroy prisoner; but was finally driven out of the town, after a combat of several hours.  
 Crèvecœur, 1672, 1794.  
 Croye, 1442 to 1467.  
 Damien (St.), 1617.

- Dantzig, 1734, 1793, 1807; 1813 to January 12th, 1814.  
 Denia, 1707.—The siege raised by the marquis d'Asfeld, to prevent the entire destruction of his army, after having given three general assaults.  
 Dewinter, 1591.  
 Dinant, 1466, 1674.  
 Diu, 1538, 1546.  
 Dole, 1479, 1636; 1668 completed the conquest of Franche Comté; 1674.  
 Domingo (St.), 1805.  
 Douai, 1710.  
 Dover, 1216.  
 Dresden, 1745, 1760, 1814.  
 Dunemonde, 1710.  
 Dunkirk, 1646, 1793.  
 Duren, 1543.  
 Egra, 1742, 1743.  
 Elmo (St.), 1793.  
 Epernay, 1592.  
 Erie (North America), August 12th, 1814.  
 Esseck, 1690.  
 Faria, 1373.  
 Figueras, August 19th, 1811.  
 Flushing, August 15th, 1809, taken by the British.  
 Fontenay, 1242, demolished.  
 Fossano, 1536.  
 Frederickshall, December 1718.—Charles XII. killed.  
 Frederickstein, August 13th, 1814.  
 Furnes, 1675, 1744, 1793.  
 Gaeta, 1433, 1707, 1734, 1799: July, 1806; 1815.  
 Gavi, 1625.  
 Genoa, 1747, 1800.  
 Gerona, December 10th, 1809.  
 Gertruidenberg, 1593, 1793, 1795.  
 Ghent, 1576; 1708. A French garrison of thirty-seven battalions surrendered to the duke of Marlborough in four days open trenches and previous to the first batteries being completed: had the place resisted till the following day, in all probability the siege would have been raised, in consequence of the intense cold which set in the night of the capitulation. 1745, 1789.  
 Gibraltar, 1704, 1779; September, 1782.  
 Giorgewo, 1790, 1807.  
 Girona, 1286, 1711.  
 Glatz, 1742, 1807.  
 Glogau, 1109, 1741, 1806.  
 Gottingen, 1760.  
 Graves, 1586, 1602, remarkable defence, 1674, 1794.  
 Gravelines, 1644.  
 Grenada, 1491, and 1492.—End of the Moorish power in Spain, after a dominion of 762 years.  
 Groll, 1527, 1606.  
 Groningen, 1580, 1594, 1672, 1795.  
 Guastalla, 1702.  
 Gueldres, 1637, 1639, 1640, 1703.  
 Haarlem, 1572, 1573.  
 Hagueneau, 1675, 1705.  
 Ham, 1411.  
 Harfleur, 1415, 1450.  
 Havannah and dependencies, 1702.  
 Heidelberg, 1688.  
 Hennebon, 1341.  
 Hesdin, 1639.—Shells brought into general use.  
 Hostalrich, May 12th, 1810.  
 Hulst, 1591, 1596, 1747.  
 Huningen, 1815.—The fortifications destroyed.  
 Ingolstadt, 1632, 1743.  
 Ismaël, 1789, taken by the Russians, when the inhabitants and soldiers were put to the sword by the order of prince Suwarow; 1807.  
 Ispahan, 1723.  
 Kaminiek, 1672.  
 Kehl, 1733, 1796, 1797.  
 Keyserwert, 1702, 1794.  
 Kinburn, 1787.  
 Knotesembourg, 1591.  
 Koenigstein, 1745, 1792, 1793, 1796.  
 Kosel, 1807.  
 Lagni, 1432, 1590.  
 Landau, 1702, 1703, 1704, 1713, 1792, 1793.  
 Landrecis, 1543, 1637; 1712. The imperialists defeated at Denain, and the siege raised in consequence of prince Eugene having established his magazines at too great a distance for his army to protect the communication with them, 1794.  
 Laon, 991, 1594.  
 Leipsic, 1637; taken and retaken several times afterwards, particularly in 1815.  
 Lemberg, 1704.  
 Lens, 1647.  
 Lerida, 1647, 1707; May 14th, 1807.  
 Leucate, 1590, 1637.  
 Leutmeritz, 1742.  
 Leyden, 1574.  
 Liege, 1468, 1702.  
 Lille, 1296, 1667; August, 1708; 1793.  
 Lillo, 1747.  
 Limerick, 1651, 1691.  
 Livron, 1547.  
 Loja, 1482.  
 Londonderry, 1689.  
 Louisbourg, 1758.  
 Lourde, 1373.  
 Lyons, 1793.  
 Maestricht, 1576, 1579; 1673, Vauban first came into notice; 1676, 1743, 1748, 1794.  
 Magdebourg, 1631, 1806.  
 Malaga, 1487.  
 Malta, 1565, 1798, 1800.  
 Mantua, 1734, 1797, 1799. Taken by Buonaparte.  
 Marseilles, 1544.  
 Martos, 1238.  
 Mentz, by Charles V., 1552; 1689, 1792, 1793, 1794, 1796, 1797.  
 Meaux, 1422, 1439.  
 Melun, 1420, 1559.  
 Menin, 1706, 1744.  
 Mequinenza, June 8th, 1810.  
 Messina, 1282; 1719—91 days.  
 Metz, 1552, 1553.  
 Mezières, 1521.  
 Middelbourg, 1572.  
 Milhaud, 1586.  
 Mons, 1572, 1691, 1709, 1746, 1792, 1794.  
 Montargis, 1427.  
 Montauban, 1621.  
 Monte-Calvo, 1558.  
 Montereau-Fault-Yonne, 1437.

- Montevideo, January 1808.  
 Montmedy, 1657.  
 Montmélian, 1600, 1691.  
 Mortagne, 1378, 1794.  
 Mothe (de la), 1634. The French, taught by Mr. Muller, an English engineer, first practised the art of throwing shells.  
 Muriel (Saguntum), October 25th, 1811.  
 Naarden, 1572.  
 Namur, 1692, 1695, 1746, 1792.  
 Naples, 1253, 1381, 1435, 1442, 1503, 1557, 1792, 1799, 1806.  
 Neiss, 1741, 1807.  
 Nemez, 1686.  
 Neuhausen, 1621, 1663, 1685.  
 Nice, 1705, remarkable for the mode of attack adopted by marshal Berwick;—see his Memoirs.  
 Nieuport, 1745; 1794, inundated and obstinately defended by a handful of British troops against a large French force under the command of general Pichegru.  
 Nocera, 1386.  
 Olivença (blockade), January 22d, 1811.  
 Olimutz, 1758.  
 Oran, 1509, 1708, 1732.  
 Orleans, 1428, 1563.  
 Ostend, from 1701 to 1704, the Spaniards lost 40,000 men in the attack; 1706, 1745.  
 Oudenarde, 1582, 1708, 1745.  
 Padua, 1509.  
 Palamos, 1694, 1695.  
 Pampluna, 1312; October 31st, 1813 (blockade).  
 Paris, 1411, 1429, 1485, 1594.  
 Parma, 1248.  
 Pavia, 1524 and 1525, siege raised, and Francis made prisoner; 1655, 1796.  
 Peronne, 1536.  
 Perpignan, 1542, 1642.  
 Philipville, 1578.  
 Philipsbourg, 1644, 1675; 1688, first experiment of firing artillery à ricochet; 1734, duke of Berwick killed; 1795.  
 Pizzighitone, 1706, 1733, 1796, 1799.  
 Plattsburg (Lake Champlain, N.A.) September 11th, 1814.  
 Pletzkow, 1581.  
 Poloz, 1550.  
 Pondicherry, 1748, 1761, 1778, 1792.  
 Pontoise, 1419, 1437, 1451.  
 Prague, 1741, 1743, 1744.  
 Quesnoy (le), 1712, 1794.  
 Randan, 1380.  
 Rees, 1599.  
 Rennes, 1357.  
 Retiro (Madrid), August 14th, 1812.  
 Rheims, 1359.  
 Rhodes, besieged three times, the last in 1522.  
 Riga, 1700, 1710.  
 Rochelle, 1372, 1573, 1627.  
 Rome, 1527, 1798.  
 Romorantin, 1356.—Artillery first used in sieges.  
 Ronda, 1485.  
 Rosas, 1645, 1795, 1808.  
 Rotweil, 1640.  
 Rouen, 1204, 1419, 1449, 1562, 1591.  
 Royan, 1621.  
 Salamanca (forts of—St. Vicente, Gayetano, Merced), June 27th, 1812.  
 Salisbury, 1349.  
 Saragossa, 1710; 1808, four months; February 21st, 1809, taken after fifty-two days open trenches, twenty-nine of which the enemy were in the streets.  
 Saverne, 1675.  
 Sbarra, 1676.  
 Schweidnitz, 1762, the first experiment to reduce a fortress by springing globes of compression; 1807.  
 Schonoven, 1575.  
 Sebastian (St.), next to Gibraltar, the strongest place in Spain, 1719; September 8th, 1814, most obstinately defended by the French; till general Graham directed the guns to be fired against the curtain, over the men's heads as they advanced to the breach.  
 Serezanella, a town in Tuscany, 1487; the first mines, since the invention of gunpowder, were made at the siege of this place, by the Genoese.  
 Seringapatam, 1799.  
 Seville, 1096, 1248.  
 Skid, 1678.  
 Sienna, 1544.  
 Sigeth, 1566.  
 Silberberg, 1807.  
 Sluys, 1587, 1604, 1757, 1794.  
 Smolensko, 1611.  
 Soissons, 1414.  
 Stralsund, 1675, the method of throwing red-hot balls first practised with certainty; 1713, 1807.  
 Straubing, 1742.  
 St. Philip (Fort), in Minorca, 1756; 1782; the garrison nearly destroyed from being lodged in damp casemates, and the defence very much abridged thereby. \*.  
 Tarifa, 1292; December 20th, 1811.  
 Tarragona, June 28th, 1811, stormed by the French—man, woman, and child put to the sword.—May, 1813, besieged by Sir John Murray,—siege raised.  
 Temeswar, 1716.  
 Terremonde, 1584.  
 Tergoes, 1572.  
 Thérouanne, 1513, 1553.  
 Thionville, 1643, 1792.  
 Thorn, 1703.  
 Thouars, 1372, 1793.  
 Tortona, 1734, 1745, 1799.  
 Tortosa, January 2d, 1811.  
 Toulon, 1707, 1793.  
 Toulouse, 1217.  
 Tournai, 1340, 1352, 1581, 1667; 1709, the best defence ever drawn from countermines; 1745, 1794.  
 Trembowla, 1675.  
 Treves, 1675.  
 Tunis, 1270, 1535.  
 Turin, 1640, 1706, 1799.  
 Urbino, 1799.  
 Vachtendonck, 1588.  
 Valencia, 1098, 1238; December 25th, 1811.  
 Valencia (of Alcantara), 1705.  
 Valencia (New, Spanish America), August 18th, 1811, surrendered to Miranda.  
 Valenciennes, 1557, 1677; 1794, taken by the allied army under the command of H. R. H. the duke of York.  
 Valognes, 1364.

- Vannes, 1343.  
 Velez, 1487.  
 Venloo, 1702, first siege undertaken by the duke of Marlborough; 1794.  
 Verceil, 1617, 1704.  
 Verdun, 1792.  
 Vienna, 1529, 1683.  
 Vintimiglia, 1746.  
 Wakefield, 1460.  
 Walcheren (Island of), taken by the British. See Flushing.  
 Woygnaff, 1676.  
 Xativa, 1707; a most memorable defence made by the inhabitants, assisted by a garrison of 600 English troops: as a punishment, the whole town, with the exception of the principal church, was razed, and its name changed to St. Philippe.  
 Xeres, 1262.  
 Ypres, 1584, 1648, 1744, 1794.  
 Ziriczee, 1576.  
 Zurich, 1544.  
 Zutphen, 1572, 1586.

**SIENITE** or **SYENITE**, in mineralogy, a compound granular aggregated rock, composed of felspar and hornblende, and sometimes quartz and black mica. The hornblende is the characteristic ingredient, and distinguishes it perfectly from granite, with which it is often confounded; but the felspar, which is almost always red, and seldom inclines to green, forms the most abundant and essential ingredient of the rock. Some varieties contain a very considerable portion of quartz and mica, but little hornblende. This is particularly the case with the Egyptian varieties, and hence these are often confounded with real granite. As it has many points of agreement with greenstone, it is necessary to compare them together. In greenstone the hornblende is usually the predominating ingredient; in sienite on the contrary it is the felspar that predominates. In greenstone the felspar is almost always green or greenish; here on the contrary it is as constantly red or reddish. Quartz and mica are very rare in greenstone, and in inconsiderable quantity; whereas they are rather frequent in sienite. Lastly, greenstone commonly contains iron pyrites, which never occurs in sienite.

It has either a simple granular base, or it is granular porphyritic; and then it is denominated porphyritic sienite. When the parts of the granular base are so minute as to be distinguished with difficulty, and it contains imbedded in it large crystals of felspar, the rock is termed sienite-porphry. It is sometimes unstratified, sometimes very distinctly stratified. It sometimes shows a tendency to the columnar structure. It contains no foreign beds. It occurs in unconformable and overlying stratification, over granite, gneiss, mica-slate and clay-slate, and is pretty continuous, and covers most of the primitive rocks. It is equally metalliferous with porphyry. In the island of Cyprus it affords much copper; many of the important silver and gold mines in Hungary are situated in it. The sienite of the forest of Thuringia affords iron. In this country there is a fine example of sienite in Galloway, where it forms a considerable portion

of the hill called Criffle. On the continent it occurs in the electorate of Saxony; and in Upper Egypt at the city of Syena, in Thebaïd, at the cataracts of the Nile, whence it derives its name. The Romans brought it from that place to Rome, for architectural and statuary purposes.

**SIFNNA**, **TERRITORIO DI SIENNA**, or **SIENNESE**, a province of Tuscany, bounded by the Florentine and the territory of Pisa; sixty-two miles in length, and of nearly an equal breadth; its superficial extent is about 3100 square miles. It is divided into two districts, called Upper and Lower; the former enjoying a pure and healthy atmosphere, the latter marshy, and much affected with the mal aria. This province contains level tracts of great fertility, and several of its mountains yield mineral products. Population 190,000.

**SIFNNA**, or **SIENA**, an ancient and considerable city of Tuscany, the capital of the above province, situated in a pleasant and healthy district, on three eminences. Population 24,000. The approach on the southern road is through a fine avenue planted with trees, and affording, from a distance, too favorable a view of the town, of which the streets are extremely uneven, winding, and narrow, so that for the chief part they are impassable for carriages. The streets are paved with brick. The only handsome square is that in which is the town-house; it contains a beautiful fountain. The piazza here is one of the principal attractions: it is a large space, well laid out with walks, and planted with statues. The esplanade is a fine shady avenue leading to the citadel, the ramparts of which, planted with trees, and laid out in the form of terraces, afford several interesting views.

The cathedral of Sienna is a marble Gothic structure, accounted inferior to none in Italy, except St. Peter's. Its nave is supported by beautiful columns; its pavement embellished with mosaics, and with delineations of sacred subjects. Several of the chapels and altars are deserving of minute attention. The town-house is a large building, also in the Gothic style, and surrounded with porticoes. Adjoining is the theatre, rebuilt since 1750. There are also in Sienna several fine family mansions, or palaces, as they are termed.

The manufactures include woollen, leather, paper, and hats, but all on a small scale. Some traffic is carried on in corn, and in the valuable marble of the environs. The town is the seat of a university, founded in 1321, and still reckoning so many as sixty professors; but it is of little repute. The academies of physics and natural history have acquired some note from their memoirs. The Siennese lay claim to a reputation for politeness, to a taste in learning and the arts, and in particular to speaking Italian with great purity. This town has, from first to last, supplied seven popes; it gave birth also to Socrinus.

Sienna was long a petty place. Augustus sent thither a colony, and Pliny mentions the town under the name of *Colonia Senensis*. Its prosperity was greatest during the middle ages, when it enjoyed an extensive commerce. It even long maintained itself as an independent republic; but, intestine divisions favoring the

designs of foreign powers, it became successively subject to French and Spanish invaders; and, in the latter part of the sixteenth century, was ceded to Florence by Philip II. of Spain. Since then it has had no separate government. It is the see of an archbishop, and is thirty miles south by east of Florence.

SIERRA LEONA, a country of western Africa, on the Atlantic, and distinguished for the colony formed there by the British nation from the most laudable motives of generosity and philanthropy. It is traversed by a considerable river, derived from an unknown source in the interior, called the Mitomba or Sierra Leon. The extent to which this last name may be applied, either to the north or south of the river, or in the interior, is very indefinite. The name is derived from a long ridge of mountains rising at no great distance from the southern bank of the river. From these descend many streams or torrents, a number of which unite, in a place called the bay of France, into a large basin, which affords the best watering-place in all Guinea. This is described as a most delightful spot, shadowed by tall trees, mingled with rocks. The country consists generally of one vast, almost impenetrable forest, only particular spots of which have been cleared and cultivated. Even at a few steps from the shores and villages the ground becomes encumbered with trees and shrubs, penetrated only by narrow paths formed by the natives to their cleared fields. The houses are low, little huts, built with wooden posts fastened in the ground, of a round or square form, and thatched with straw. The villages consist of thirty or forty of such huts, and are moved without the least difficulty from place to place as convenience or fancy direct. Rice is raised wherever the ground is sufficiently watered for its production, and forms the constant food of the rich; but the poor content themselves with millet, yams, and plantains. There is great abundance of fruits. The pine-apple is pre-eminent; to which are added oranges, lemons, limes, and a fruit resembling a melon. The palm tree yields a liquor which is eagerly drank, and possesses intoxicating qualities. Elephants' teeth brought to the coast here are valued above any other on the same coast, being remarkably clean, white, and free from specks, though they occur elsewhere of larger size. A considerable quantity of civet is brought to market, the produce of a peculiar species of cat. The woods and mountains are considerably infested with wild animals, particularly lions, from the multitude of which the country appears to have derived its name. Apes, also, move about in vast bodies. The exuberance of life in a tropical climate gives rise also to numerous and troublesome swarms of insects, flies, mosquitoes, and particularly ants, the white species of which commit extraordinary devastation. The same cause multiplies the serpent species to a remarkable degree. The rivers contain large alligators, and the manatea or sea cow.

The Portuguese were the first who formed settlements in the river of Sierra Leon; but afterwards all the nations of Europe found their way thither. The English established their fac-

tory upon Bance Island, situated in the middle of the river, being merely a rock ascended by steps, and possessing no advantage except that of security. The fort was substantially built of stone and lime, defended by ten or twelve guns, and garrisoned by about twenty whites and thirty grumettas or free negroes. The main object of this, as of every other establishment on the same coast, was that which it has since been made so active an instrument in overthrowing, the slave trade; and the supply here afforded, of these unfortunate victims of European cupidity, was very considerable.

SIERRA LEONA, or LEONE, mountains of Africa, between Nigritia and Guinea, extending as far as Abyssinia. See MOUNTAIN. Sierra Leon, being thinly inhabited, appeared to some benevolent gentlemen in England a place where, without incommoding the natives, a sufficient quantity of ground might be bought, on which to settle a great number of free negroes, who, in 1786, swarmed in London in idleness and want. About 400 of these, with sixty whites, mostly women of bad character and in ill health, were accordingly sent out, at the charge of government, to Sierra Leon. Necessity, it was hoped, would make them industrious and orderly; and captain Thomson of the navy, who conducted them, obtained for their use a grant of land to his majesty from king Tom, the neighbouring chief, and afterwards from Naimbanna, the king of the country. The colony, however, soon went to ruin; but the land which they occupied, being about twenty miles square, his majesty was enabled to grant it, by act of parliament, to another colony, founded on better principles, and for a still nobler purpose. The most intelligent members of that society, which has labored so strenuously to procure an abolition of the slave trade, justly concluding that the natives of Guinea would reap very little benefit from the attainment of their object, unless they should be taught the principles of religion and the arts of civil life, which alone can render them really free, conceived the plan of a colony at Sierra Leon, to be settled for the truly generous purpose of civilising the Africans, by maintaining with them a friendly intercourse, and a commerce in every thing but men. This plan could not be carried into effect but at a very great expense. Subscriptions were therefore opened upon rational and equitable terms, and a sum deemed sufficient was speedily raised. An act of parliament was passed in favour of the subscribers, by which they were incorporated by the denomination of the Sierra Leon Company; and in pursuance of that act they held their first meeting at London on the 19th of October, 1791, when the following gentlemen were chosen directors for that year:—‘Henry Thornton, esq., M. P., chairman; Philip Sansom, esq., deputy chairman; Sir Charles Middleton, bart.; Sir George Young, knt.; William Wilberforce, esq., M. P.; Rev. Thomas Clarkson, A. M.; Joseph Hardcastle, esq.; John Kingston, esq.; Samuel Parker, esq.; Granville Sharp, esq.; William Sandford, esq.; Vickeris Taylor, esq.; George Wolfe, esq.’ The directors having stated the natural advantages of Sierra Leon, and its present miserable condition, ob-

served that they had not merely to establish a commercial factory, but that, to introduce civilisation, cultivation, and a safe trade, the company must provide for the security of the persons and property of the colonists. The directors therefore resolved that three or four vessels should sail at once, with such a number of people as would be able to protect and assist each other; with goods both for trade and for the supply of the colony. Accordingly several vessels sailed, having on board a council for the government of the colony and the management of the company's affairs; a number of artificers and other servants of the company, some soldiers, and a very few English settlers. The directors were laudably cautious in the choice of colonists. They admitted into the society no white man of bad character, or who was not a declared enemy to the slave trade; and, as the chief object of their enterprise was the civilisation of the natives, it was with great propriety that they chose more than three-fourths of their settlers from the free negroes in Nova Scotia, who had borne arms for the British government during the American war. The superintendent and council were particularly instructed to secure to all blacks and people of color at Sierra Leona equal rights and equal treatment, in all respects, with whites. They were to be tried by jury, as well as others; and the council was desired to allot to the blacks, employments suited to their abilities, and to afford them every opportunity of cultivating their talents. All practicable means of maintaining subordination were directed to be used; and the council was especially instructed to promote religion and morals, by supporting public worship and the due observance of the Sabbath, and by the instruction of the people, and the education of children. But no person was to be prevented from performing or attending religious worship, in whatever place, time, or manner, he might think fit, or from peaceably inculcating his own religious opinions. Orders were given in choosing the site of a town to consider health as the first object; and the first town was directed to be called Free Town. Articles for building and cultivation were sent out, besides the cargoes for prosecuting the company's commerce; and schools for reading, writing, and accounts, were ordered to be set up for the purpose of instructing the children of such natives as should be willing to put them under the company's care. The leading object of the company was to substitute for that disgraceful traffic, which has too long subsisted, a fair commerce with Africa, and all the blessings which might be expected to attend it. Considerable advantages appeared hereby likely to result to Great Britain, not only from our obtaining several commodities cheaper, but also from opening a market for British manufactures. From this connexion Africa was likely to derive the still more important benefits of religion, morality, and civilisation.

To accomplish these purposes, it was necessary for the company to possess a tract of land as a repository for their goods, and which the Africans might cultivate in peace, secure from the ravages of the slave trade. It had been ascertained, beyond a doubt, that the climate and soil of Africa

were admirably suited to the growth of sugar, spices, coffee, cotton, indigo, rice, and every other species of tropical produce. The company proposed to instruct the natives to raise these articles, and to set them the example, by a spirited cultivation on its own account. Directions were given to the company's commercial agent to push forward a trade, in a mode prescribed, in the present produce of Africa. Measures were taken for cultivating, on the company's account, the most profitable tropical produce; and, in particular, a person of long experience in the West Indies was ordered to begin a sugar plantation. A mineralogist and botanist were likewise engaged to go out and explore the country for new articles of commerce. Every thing being thus settled, upon the most equitable and benevolent principles, the ships sailed with the British colonists, to whom, in March 1792, were added 1131 blacks from Nova Scotia. The native chiefs being reconciled to the plan, and made to understand its beneficent tendency towards their people, the colony proceeded to build Free Town, on a dry and rather elevated spot on the south banks of the river. It occupied between seventy and eighty acres, its length being about one-third of a mile, and its breadth nearly the same; and it contained nearly 400 houses, each having one-twelfth of an acre annexed, on which a few vegetables were raised. There were nine streets running from north-west to south-east, and three cross streets, all eighty feet wide, except one of 160 feet, in the middle of which were all the public buildings. These consisted of a governor's house and offices; a large storehouse; a large hospital; six or eight other houses, offices, and shops, occupied by the company's servants; and a church capable of containing 800 people. The colonists at first suffered much from the rainy season, against which it was not in their power to provide sufficient protection; but at the end of it they recovered in a great measure their health and spirits, and proceeded with alacrity to execute the various purposes of their settlement. To excite emulation in culture, the government gave premiums to those colonists who raised the greatest quantities of rice, yams, eddoes, cabbages, Indian corn, and cotton, respectively. To limit the excesses of the slave trade, and gain the favor of the neighbouring chiefs, the directors instructed the governor and council to redeem any native from the neighbourhood, who should be unjustly sold either to or by a British subject. The servants of the company conducted themselves with the utmost propriety, being sober, moral, and exemplary; and from the labors of the clergymen were derived services highly important in every point of view. Before the end of two years from the institution of the colony, order and industry had begun to show their effects in an increasing prosperity. The woods had been cut down to the distance of about three English miles all round the town. By these means the climate had become healthier, and sickness had greatly abated. The fame of the colony had spread not only along the whole western coast of Africa, but also to parts far distant from the coast; embassies had been received of the most

friendly nature from kings and princes several hundred miles distant; and the native chiefs had begun to send their children to the colony, with full confidence, to be taught reading, writing, and accounts, and to be brought up in the Christian religion. In a word, it was not without grounds that the directors looked forward to that joyful period when, by the influence of the company's measures, the continent of Africa should be rescued from her present state of darkness and misery, and exhibit a delightful scene of light and knowledge, of civilisation and order, of peaceful industry and domestic comfort. On their beneficent exertions they hoped with confidence for the blessing of providence; they were countenanced and supported by the British government; and, upon the breaking out of the present war, the French Convention authorised one of their agents to write to the directors, requesting a full account of the design of the institution, and the names of the ships employed in the service, and assuring them of the good wishes of the French government to so noble an undertaking. How completely that government fulfilled its promise is very generally known. Having vindicated the rights of man in Europe by the violation of every principle of truth and justice, they determined by the same means to give light and liberty to the Africans; and that they have fully carried their determination into effect will be seen by the following extract of a letter from Mr. Afzelius, the company's botanist, dated Sierra Leona, 15th of November, 1794:—

'The French have been here and ruined us. They arrived on the 28th of September last, early in the morning, with a fleet consisting of one large ship, two frigates, two armed brigs, and one cutter, together with two large armed merchant ships, taken by them at the Isle de Los, an English slave factory to the north of our colony, and which they have also destroyed and burnt. So well had they concealed their nation, that we took them at first for English. They had English-built vessels, which were rigged in the English way. They showed the English flag, and had their sailors, at least those we saw on deck, dressed like English. In short, we did not perceive our mistake till we observed them pointing their guns. We had not strength sufficient to resist, and therefore our governor gave orders that, as soon as they should begin to fire, the British flag should be struck, and a flag of truce hoisted. Accordingly this was done, but still they continued firing, and did much damage, both within and without the town. They killed two people and wounded three or four. But, as we did not understand the meaning of this proceeding, we asked them for an explanation; and they answered us that we should display the flag of liberty as a proof of our submission. We assured them that it should already have been done if we had had any, which terminated the hostilities from the ships. In the mean time, most of the inhabitants had fled from the town, having taken with them as much of their property as they conveniently could in such a hurry. I was with the governor, together with a number of others; but, as soon as I was certain they were enemies, I went towards my own house with a

view to save as much as possible of my property and natural collections; but was received in such a manner that I could not venture to proceed. My house was situated near the shore, and unfortunately just opposite the frigate which fired. I saw the balls passing through the house, and heard them whizzing about my ears. I saw that I should lose all my property; but life was dearer to me, and I hastened to the woods. In the afternoon the enemy landed, finding the town almost destitute of people, but rich in provisions, clothing, and other stores. They began immediately to break open the houses and to plunder. What they did not want they destroyed, burnt, or threw into the river. They killed all the cattle and animals they found in the fields or streets, yards, or elsewhere, not sparing even asses, dogs, and cats. These proceedings they continued the whole succeeding week, till they had entirely ruined our beautiful and prospering colony; and, when they found nothing more worth plundering, they set fire to the public buildings and all the houses belonging to the Europeans; and burnt, as they said, by mistake nine or ten houses of the colonists. At last, after inflicting on us every hardship we could suffer, only sparing our lives and the houses of the colonists, they sailed on the 13th of October last, at noon, proceeding downwards to the Gold Coast, and left us in the most dreadful situation, without provisions, medicines, clothes, houses, or furniture, &c. &c., and I fear much that most of us should have perished had not our friends in the neighbourhood, both natives and Europeans, who were so happy as to escape the enemy, been so kind as to send us what they could spare. In the mean time most of us have either been, or still are, very sick, and many have died for want of proper food and medicine. The worst, however, is now past. At least we are not in any want of provision, although of the coarsest kind, but are destitute of the most necessary articles and utensils for the house, the table, and the kitchen.' It was thus that the French Convention executed their purpose of spreading light and liberty through the world. The Sierra Leona colony was established for no other end than to abolish the slave trade, to enlighten the Africans, and to render them virtuous, rational, free, and happy; and those powerful patrons of the rights of man destroyed that colony with many circumstances of the most wanton cruelty.

Even this disaster was repaired by the active exertions of the company; the settlement resumed its prosperity, extended its survey over the neighbouring coasts, and received embassies even from remote African states. The company, however, exhausted by its losses, and by that profusion to which such establishments are liable, finally found it expedient to make an arrangement with government, by which Sierra Leona was placed under its immediate jurisdiction, like other colonies. About the same time the African Institution was set on foot by a number of excellent and distinguished individuals, for the purpose of devoting their efforts to the general improvement of this great continent. Sierra Leona appeared the most advantageous centre from which their efforts might emanate; and it

was therefore placed under their entire management. The character of the members was a sufficient pledge for the purity of that zeal with which they would pursue every object tending to the improvement of the colony, and the general benefit of Africa. This is, moreover, fully evinced in the successive reports which they have published on the subject. Yet in these they candidly admit the obstacles which have obstructed the full accomplishment of the objects in view. The volatile and turbulent disposition of the native powers renders them always prompt to take offence, and to embark in hostilities; and this unfriendly disposition is increased by the abolition of the slave trade, to which they were accustomed to look as the chief means of purchasing European luxuries. It has thus been found impossible to avoid repeated ruptures, the effects of which were always pernicious to the interests of the colony. One mode of recruiting its numbers was derived from the negroes captured on their way to the West Indies, by the vessels destined to put a stop to the slave trade; but the disposal of these was attended with considerable difficulty. The first plan was to make them purchase their liberty by a temporary bondage, under the name of indenture; but it was naturally objected that this was running into the very evil which the colony was established to prevent; and the practice has been properly discontinued. Still, to preserve the requisite order and propriety among such a motley population left at full liberty, has not been found an easy task. The introduction of the forms of English law, a measure in itself so salutary, seems to have produced rather injurious effects upon this African race. It has inspired them with an unbounded rage for litigation, and called forth innumerable petty suits for assault and defamation, in which it appears that the female sex are usually in the proportion of four to one. Lastly, the distance from Britain, the unhealthy nature of the settlement, and the very moderate amount of the salaries, render it very difficult to procure respectable and duly qualified persons to fill the different official situations. Notwithstanding all these disadvantages, a gradual but decided improvement has taken place, and is becoming more sensible, as experience teaches the best modes of administering such an establishment. Within the last few years, both the extension and improvement of the colony have been particularly remarkable. With the efforts of the institution have been combined those of the Church Missionary Society, who have introduced, with great advantage, the British system of education.

Its first establishment was in the country schools; and in Freetown, where a different method had been originally employed, there occurred considerable obstacles to its introduction, from the murmurs of the parents, and the disinclination of the children. At length, however, the plan was completely successful, and the schools contain now 350 boys and girls, and 180 adults. In consequence of the great increase of population from disbanded soldiers, and still more from captured negroes, a number of new towns have been founded in different parts of the territory. The principal of these is Regent's

Town, which was founded in 1816 by Mr. Johnson, the missionary teacher, in a state of the utmost barbarism. It contained 1100 captured negroes, belonging to twenty-two nations in all different parts of the continent, without any tie to each other, and many of them separated by deadly enmity. Some would live in the woods, apart from society; others, particularly those of the Ebo nation, subsisted chiefly by thieving and plunder, stealing fowls, and eating them raw. One of them, having stolen a litter of nine pigs, was traced by the owner, who found that the animals had been all thrown alive into a pot of boiling water. Another, having lost a dog and pot, discovered the thief, and found the dog boiling in the pot for dinner. It was some time before any impression could be made on this savage population; but at length the labors of the excellent missionary, seconded by those of some intelligent negroes, produced the happiest effects. In the course of the few years which have since elapsed an entirely new scene has arisen. The town itself is laid out with regularity; nineteen new streets are formed and levelled, with good roads round the place; a large stone church rises in the midst of the habitations; a government-house, a parsonage-house, school-houses, store-houses, a bridge of several arches, some native dwellings, and other buildings, all of stone, are either finished, or on the point of being so. The state of cultivation farther manifests the industry of the people: all are farmers; gardens fenced in are attached to every house; all the land in the immediate neighbourhood is under cultivation; and there are fields even to the distance of three miles; vegetables and fruits are raised in abundance; and there is a good supply of domestic animals. Many of them, besides the cultivation of the ground, carry on trades; fifty are masons and bricklayers, forty carpenters, thirty sawyers, thirty shingle makers, twenty tailors, four blacksmiths, and two butchers. In these various ways upwards of 600 of the negroes provide for their own maintenance. The appearance and manners of the people have improved in an equal degree. They are all now decently clothed: almost all the females have learned to make their own clothing; about 400 couple are married; the attendance on public worship is regular and large, comprising on an average not less than 1200 or 1300 negroes, while Mr. Johnson's first congregation amounted only to nine; and the schools, which opened with 140 children and sixty adults, now contain upwards of 500 scholars. In the more immediate vicinity of Freetown, there are also the townships of Charlotte, Leopold, Gloucester, and Wilberforce. These, with Freetown, contain upwards of 2000 scholars, adults and children, in a course of regular instruction. Within the last two years, in consequence of the accessions to the population, four new and more distant stations have been formed; Waterloo, bordering on the Timmances, and containing already 700 inhabitants; Wellington, near to Kissey; and Hastings, not yet risen to any importance. These are on the eastern side of the colony, while on the south-western is York, bordering on the Sherbros, where a settlement called Kent had already been formed.

Connected also with the colony, a settlement has been formed called Bathurst, at St. Mary's, on the Gambia. The population is increasing. The climate is said to be healthy, and provisions much cheaper than at Sierra Leon; and the opportunity afforded of communicating with the populous countries on that river renders it extremely valuable.

The following is the distribution and amount of the population of Sierra Leon, according to a census taken on the 8th of July 1820:—

Freetown and suburbs . . . . .	4735
Leopold . . . . .	469
Charlotte . . . . .	268
Bathurst . . . . .	469
Gloucester . . . . .	563
Regent and vicinity . . . . .	1213
Kissey and neighbourhood . . . . .	1033
Wilberforce . . . . .	409
Kent and vicinity . . . . .	296
Waterloo . . . . .	353
Hastings . . . . .	195
Wellington . . . . .	456
York . . . . .	297
Leicester hamlet . . . . .	73
Villages in peninsula . . . . .	1468
Peninsula and isles in river . . . . .	115
Gambia island . . . . .	37
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Of these, there are	
Men . . . . .	5796
Women . . . . .	3020
Boys . . . . .	
Girls . . . . .	1678
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12,509

According to nations, the above population is classed as follows:—

Europeans . . . . .	120
Nova Scotians . . . . .	730
Maroons . . . . .	594
Natives . . . . .	2933
Liberated negroes . . . . .	8076

These statements are exclusive of the military (European and native) and their families. The increase since the census of the 31st of December 1818 is 2944, chiefly arising from the liberated negroes and discharged soldiers.

The following are the number of scholars educating according to the national system, in the different establishments:—

Freetown and suburbs . . . . .	575
Leopold . . . . .	144
Charlotte . . . . .	106
Bathurst . . . . .	113
Gloucester . . . . .	258
Regent town . . . . .	432
Kissey . . . . .	158
Wilberforce . . . . .	75
Kent . . . . .	77
Waterloo . . . . .	86
Hastings . . . . .	57
Wellington . . . . .	16
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2097

Government at one period contemplated the abandonment of this settlement, but subsequently changed its purpose.

SIERRA MADRE, a ridge of mountains in North America, forming part of that vast chain which, under the different appellations of the Andes and Rocky Mountains, runs through the whole extent of the American continent, beginning at Terra del Fuego, and ending at the Icy Ocean in the north. The term of Sierra Madre, or Topia, is, however, more strictly applied to that elevated part of this immense ridge which commences near Guadalaxara, and extends 450 miles in a northerly direction into New Mexico. The breadth of all its ridges or parallel crests, at this part, is sometimes 120 miles, where the chain is called more distinctively by the appellation of Sierra Madre, or Mother Ridge, on account of its great altitude above the other parts. Its sides are said to present the most sublime specimens of mountain scenery. This part of the chain, and indeed nearly the whole of it, is in general densely covered with forests of the most gloomy appearance, composed principally of pines and oaks. Here birds of every description, peculiar to the country, inhabit; and their variegated and beautiful plumage throws a ray of lustre on the sombre scene. On the summits of some of these mountains snow eternally lodges. Many rivers take their rise in the sides and near the tops of this Cordillera, and rush with impetuous force into the valleys below, whence they take their courses to the Atlantic and Pacific Oceans.

During this period, when the natives are forced to much manual labor and bodily exertion in the open air, to repress the ravages of the waters, the mosquitoes become intolerable. The Sierra Madre sends off a branch in the west part of the province of New Mexico. This ramification is called Gemes, and bears a south-easterly direction; whilst on the eastern side it throws off another arm, called the ridge of Nahmi, which is, however, of inferior height, and of shorter duration, than that of Gemes. From the shore of the Pacific to the great Topian ridge, the general distance may be computed at 140 miles: in many places, however, it is greater, and in some, where the continent begins to straighten its bounds, not one-half that distance. The Topian chain takes the name of Sierra de las Grullas from 33° to 40° N. lat.; beyond that, to 42° N. lat., it receives the name of Sierra Verde. During its southern course it bears several distinct names, besides the general one of Sierra Madre.

SIERRA DE QUINCHOPUCA AND PACARAIMO, a chain of the Andes, in New Granada, branching eastward from the main chain, near the lake Parima and the Amazons. It stretches towards French Guiana, where its form is little known, as the interior of that country is inhabited by Caribs and negroes, who keep the settlers at bay. The rivers of Berbice, Surinam, Marony, and Essequibo, rise in this part of the chain.

SIERRA MORENA, a chain of mountains in Spain, between the provinces of Cordova and Jaen on the south, and those of Estramadura and La Mancha on the north. About twenty-seven years ago this district was the dread of travellers; but by the exertions of M. Le Maur, a French engineer, who, in 1779, was appointed by count Florida Blanca to superintend the business, a new road has been made over, which is

equal to the finest in Europe; and, of consequence, several new towns have been built, and new settlements formed, in a district that had for many centuries continued barbarous and uncultivated.

SIEVE, *n. s.* } From sift. Hair or lawn

SIFT, *v. a.* } strained upon a hoop, by which flower is separated from bran, or fine powder from coarse; a boulter: to use a sieve; separate; try.

We have sifted your objections against those pre-eminentes royal. *Hooker.*

All which the wit of Calvin could from thence draw, by sifting the very utmost sentence and syllable, is no more than that certain speeches seem to intimate that all Christian churches ought to have their elderships. *Id.*

Thy counsel

Falls now into my ears as profitless  
As water in a sieve. *Shakspeare.*

I fear me, if thy thoughts were sifted,  
The king thy sovereign is not quite exempt  
From envious malice of thy swelling heart.

*Id. Henry VI.*

As near as I could sift him on that argument.  
*Shakspeare.*

In the sifting of such favour, all that came out could not be expected to be pure meal, but must have a mixture of padar and bran. *Wotton.*

Opportunity I here have had

To try thee, sift thee, and confess have found thee  
Proof against all temptation, as a rock  
Of adamant. *Milton's Paradise Regained.*

If life sunk through you like a leaky sieve,  
Accuse yourself, you lived not while you might. *Dryden.*

When yellow sands are sifted from below,  
The glittering billows give a golden show. *Id.*  
An innocent found a sieve, and presently fell to stopping the holes. *L'Estrange.*

One would think that every member, who embraces with vehemence the principles of either of these parties, had thoroughly sifted and examined them, and was secretly convinced of their preference to those he rejects. *Addison.*

SIEUR, *n. s.* a ci-devant title of respect among the French, like that of master among us, restored, we suppose, with many worse things of the old system. It was much used by lawyers, as also by superiors in their letters to inferiors.

SI-FANS, or TOU-FANS, a people inhabiting the country on the west of China. Their country is only a continued ridge of mountains, enclosed by the rivers Hoang-ho on the north, Yang-long on the west, and Yang-tse-kiang on the east, between lat.  $30^{\circ}$  and  $35^{\circ}$  N. The Si-fans are divided into two kinds of people; the one are called by the Chinese Black Si-fans, the other Yellow, from the different colors of their tents. The black are the most clownish and wretched; they live in small bodies, and are governed by petty chiefs, who all depend upon a greater. The yellow Si-fans are subject to families, the oldest of which becomes a lama, and assumes the yellow dress. These lama princes, who command in their respective districts, have the power of trying causes, and punishing criminals; but their government is by no means burdensome; provided certain honors are paid them, and they receive punctually the dues of

the god Fo, which amount to very little, they molest none of their subjects. The greater part of the Si-fans live in tents; but some of them have houses built of earth, and even brick. Their habitations are not contiguous; they form at most but some small hamlets, consisting of five or six families. They feed a great number of flocks, and are in no want of any of the necessities of life. The principal article of their trade is rhubarb, which their country produces in great abundance. Their horses are small; but they are well shaped, lively, and robust. These people are of a proud and independent spirit, and acknowledge with reluctance the superiority of the Chinese government, to which they have been subjected: when they are summoned by the mandarins they rarely appear; but the government, for political reasons, winks at this contempt, and endeavours to keep these intractable subjects under by mildness and moderation: it would, besides, be difficult by rigorous means to reduce them to perfect obedience; their wild and frightful mountains (the tops of which are always covered with snow, even in July) would afford them places of shelter, from which they could never be driven by force. The customs of these mountaineers are totally different from those of the Chiasee. It is, for example, an act of great politeness among them to present a white handkerchief of taffety or linen when they accost any person whom they are desirous of honoring. All their religion consists in their adoration of the god Fo, to whom they have a singular attachment: their superstitious veneration extends even to his ministers, on whom they have considered it as their duty to confer supreme power and the government of the nation.

SIGEUM, or SIGEUM, in ancient geography, a celebrated town of Troas, on a promontory so named, near the mouth of the Scamander, extending six miles along the coast. Near this town and promontory most of the battles between the Greeks and Trojans were fought, according to Homer, and there too Achilles was buried. This cape is now called Inehisari.

SIGAULTIAN OPERATION, a method of delivery in cases of difficult labor, first practised by M. Sigault. It consists in enlarging the dimensions of the pelvis, in order to procure a safe passage to the child without injuring the mother. See MIDWIFERY.

SIGESBECKIA, in botany, a genus of plants belonging to the class of syngenesia, and to the order of polygamia superflua; and in the natural system ranging under the forty-ninth order, composita. The receptacle is paleaceous; the pappus is wanting; the exterior calyx is pentaphylloous, proper, and spreading; the radius is halved. There are three species: 1. *S. flocculosa*, a native of Peru; 2. *S. occidentalis*, a native of Virginia; 3. *S. orientalis*, a native of China and India.

SIGH, *v. n., v. a. & n. s.* Sax. *pican, ricettan*; Dut. *suchten*. To emit the breath audibly, as in grief: to lament; mourn: a violent and audible emission of the breath, as in sadness.

For the oppression of the poor, for the sighing of the needy, will I arise. *Psalm xii. 5.*

He sighed deeply in his spirit, and saith, Why doth this generation seek after a sign? *Mark viii. 12.*

Full often has my heart swoln with keeping my sighs imprisoned; full often have the tears I drove back from mine eyes turned back to drown my heart.

*Sidney.*

Love is a smoke raised with the fume of sighs;  
Being purged, a fire sparkling in lovers' eyes.

*Shakespeare.*

What a sigh is there! The heart is sorely charged.

*Id.*

I'll not be made a soft and dull-eyed fool,  
To shake the head, relent, and sigh, and yield  
To Christian intercessors.

*Shakespeare. Merchant of Venice.*

Laughing, if loud, ends in a deep sigh; and all pleasures have a sting in the tail, though they carry beauty on the face. *Taylor.*

In Venus' temple, on the sides were seen Issuing sighs, that smoked along the wall. *Dryden.*

Happier he,

Who seeks not pleasure through necessity,  
Than such as once on slippery thrones were placed,  
And, chasing, sigh to think themselves are chased.

*Id.*

Ages to come, and men unborn,  
Shall bless her name, and sigh her fate. *Prior.*

**SIGHT, n. s.** *Sax. gērīðe; Belg. sickt;*  
**SIGHT'ED, adj.** *Swed. sigte.* Perception by  
**SIGHT'FUL,** *the eye; the sense of seeing;*  
**SIGHT'LESS,** *view; notice; knowledge;*  
**SIGHT'LY.** *eye; opening for the eye;*  
to use; show; object of vision: sighted is, seen in a particular manner: sightful, watchful: sightless, blind; not sightly: sightly, agreeable to the sight.

Moses said, I will turn aside, and see this great sight, why the bush is not burnt. *Exodus iii. 3.*

Thus are my eyes still captive to one sight;  
Thus all my thoughts are slaves to one thought still.

*Sidney.*

As they might, to avoid the weather, pull the joints of the coach up close, so they might put each end down, and remain as discovered and open sighted as on horseback. *Id.*

But still, although we fail of perfect rightfulness, Seek we to tame these childish superfluities; Let us not wink, though void of purest sightfulness. *Id.*

Them seemed they never saw a sight so fair Of fowls so lovely, that they sure did deem Them heavenly born. *Spenser.*

Full of unpleasing blots and sightless stains, Patched with foul moles, and eye-offending marks. *Shakespeare.*

It lies as sightly on the back of him, As great Alcides shews upon an ass. *Id. King John.*

Their armed staves in charge, their beavers down, Their eyes of fire sparkling through sights of steel. *Shakespeare.*

Not an eye

But is a-weary of thy common sight,  
Save mine, which hath desired to see thee more.

*Id.*

If bees go forth right to a place, they must needs have sight. *Bacon.*

Nine things to sight required are;

The power to see, the light, the visible thing,

Being not too small, too thin, too nigh, too far,

Clear space, and time the form distinct to bring.

*Davies.*

'Tis still the same, although their airy shape All but a quick poetick sight escape. *Denham.*

Undaunted Hotspur

Brings on his army, eager unto fight,  
And placed the same before the king in sight.

*Daniel.*

The king was very quick sighted in discerning difficulties, and raising objections, and very slow in mastering them. *Clarendon.*

O loss of sight, of thee I most complain!  
Blind among enemies, O worse than chains,

Dungeon, or beggary, decrepit age!

*Milton's Agonistes.*

Things invisible to mortal sight. *Milton.*

Mine eye pursued him still, but under shade  
Lost sight of him. *Id. Paradise Lost.*

What form of death could him affright,  
Who unconcerned, with stedfast sight,  
Could view the surges mounting steep,  
And monsters rolling in the deep?

*Dryden's Horace.*

Aeneas cast his wondering eyes around,  
And all the Tyrrhene army had in sight,  
Stretched on the spacious plain from left to right.

*Dryden.*

A great many brave sightly horses were brought out, and only one plain nag that made sport.

*L'Estrange.*

Having little knowledge of the circumstances of those St. Paul writ to, it is not strange that many things lie concealed to us, which they who were concerned in the letter understood at first sight. *Locke.*

I took a felucca at Naples to carry me to Rome, that I might not run over the same sights a second time. *Addison.*

We have thirty members, the most sightly of all her majesty's subjects; we elected a president by his height. *Id.*

It was writ as a private letter to a person of piety, upon an assurance that it should never come to any one's sight but her own. *Wake.*

The latent tracts, the giddy heights explore,  
Of all who blindly creep or sightless roar. *Pope.*

Not proud Olympos yields a nobler sight,  
Though gods assembled grace his towering height,  
Than what more humble mountains offer here,  
Where, in their blessings, all those gods appear. *Id.*

Before you pass the' imaginary sights  
Of lords, and earls, and dukes, and gartered knights,  
While the spread fan o'er shades your closing eyes,  
Then give one flirt, and all the vision flies. *Id.*

My eyes are somewhat dimmed grown;

For nature, always in the right,

To your decays adapts my sight. *Swift.*

Their having two eyes and ears so placed is more sightly and useful.

*More's Antidote against Atheism.*

**SIG'IL, n. s.** *Lat. sigillum.* Seal; signature.

Sorceries to raise the' infernal powers,  
And sigils framed in planetary hours.

*Dryden's Knight's Tale.*

**SIGISMUND**, of Luxemburg, emperor of Germany, was the son of Charles IV. and born in 1368. He married Mary, queen of Hungary, daughter of Louis the Great, and was elected king of Hungary in 1386. In 1396 he was defeated by Bajazet I., emperor of the Turks, and obliged to fly for refuge to Manuel, emperor of the East. See CONSTANTINOPLE. After the defeat of Bajazet by Tamerlane (see BAJAZET I.), he recovered his dominions, and in 1410 was elected emperor. See GERMANY. To restore peace to the church, then disturbed by the

seclusions occasioned by the antipopes John XXIII. and Benedict XIV., he called the Council of Constance, 1414. To this council the celebrated John Huss was summoned, and obtained a safe conduct from Sigismund for his protection; notwithstanding which he was basely murdered. See *Huss*. This infamous treachery provoked the Hussites to take up arms under Zisca, and gave rise to a bloody and barbarous war, which lasted eighteen years. Sigismund died in 1437.

**SIGMA**, Greek σίγμα, in archaiology. Among the Greeks the letter Σ had at first the form of a C, and the Romans having adopted this form in the construction of their tables, instead of the triclinium, the name of sigma was given to those which resemble the shape of a horseshoe, round which was placed a couch following the diameter of the table. The most honorable places were those at the two extremities of this bed, and at the void space left by the semicircle the servants introduced the meats.

**SIGN**, *n. s. & v. a.* { Fr. *signe*. A token;

**SIGN-POST**, *n. s.* { that by which any thing is shown; a wonder; prodigy; memorial; distinctive mark; a constellation of the zodiac; a typical representation; symbol; to betoken; mark; ratify by signature: a sign-post is a post on which a sign is exhibited.

If they will not hearken to the voice of the first *sign*, they will not believe the latter *sign*.

*Exodus* iv. 8.

The fire devoured two hundred and fifty men, and they became a *sign*. *Numbers* xxvi. 10.

An outward and visible *sign* of an inward and spiritual grace. *Common Prayer*.

They made *signs* to his father. *Luke*.

*Signs* must resemble the things they signify. *Hooker*.

Underneath an alehouse' paltry *sign*. *Shakspeare, Henry VI.*

There stay until the twelve celestial *signs* Have brought about their annual reckoning. *Shakspeare*.

You *sign* your place and calling in full seeming, With meekness and humility, but your heart Is crammed with arrogancy. *Id. Henry VIII.*

Now did the *sign* reign, and the constellation was come, under which Perkin should appear. *Bacon's Henry VII.*

He barely named the street, promised the wine, But his kind wife gave me the very *sign*. *Donne*.

He should share with them in the preserving A shed or *signpost*. *Ben Jonson's Catiline*.

True sorrow's like to wine, That which is good does never need a *sign*. *Suckling*.

The holy symbols or *signs* are not barely significative; but what they represent is as certainly delivered to us as the symbols themselves. *Browne*.

The sacraments and symbols are just such as they seem; but, because they are made to be *signs* of a secret mystery, they receive the names of what they themselves do *sign*. *Taylor*.

The ensign of Messiah blazed, Aloft by angels borne, his *sign* in heaven. *Milton*.

Compelled by *signs* and judgments dire. *Id.*

*Signs* for communication may be contrived from any variety of objects of one kind appertaining to either sense. *Holder*.

After every foe subdued, the sun Thrice through the *signs* his annual race shall run. *Dryden*.

To express the passions which are seated in the heart by outward *signs*, is one great precept of the painters, and very difficult to perform.

*Dryden's Dryfesnay*.

This noble invention of our author's hath been copied by so many *signpost* dawbers, that now 'tis grown fulsome, rather by their want of skill than by the commonness.

*Id.*

Be pleased to *sign* these papers: they are all Of great concern. *Id. Cleomenes*.

When any one uses any term, he may have in his mind a determined idea which he makes it the *sign* of, and to which he should keep it steadily annexed.

*Locke*.

Wit and fancy are not employed in any one article so much as that of contriving *signs* to hang over houses. *Swift*.

**SIGN**, in general, is the mark or character of something absent, or invisible. See **CHARACTER**.

**SIGN**, among physicians, denotes some appearance in the human body, which serves to indicate or point out the condition of the patient with regard to health or disease.

**SIGN**, in algebra. See **ALGEBRA**.

**SIGN**, in astronomy. See **ASTRONOMY**.

**SIGNAL**, *n. s. & adj.* { Fr. *signal*. Notice by a sign; the sign

**SIGNALITY**, *n. s.* { that gives notice: as *Signality*, *adv.* { an adjective, noted;

**SIGNATION**, *n. s.* { eminent; remarkable: the adverb corresponding: signality, remarkable quality (obsolete): to signalize is to make eminent or noted: signation, sign given; act of betokening.

The weary sun hath made a golden set, And, by the bright track of his fiery car, Gives *signal* of a goodly day to-morrow.

*Shakspeare, Richard III.*

He was esteemed more by the parliament, for the signal acts of cruelty committed upon the Irish. *Clarendon*.

It seems a *signality* in providence, in erecting your society in such a juncture of dangerous humours.

*Glanville*.

Of the ways whereby they enquired and determined its *signality*, the first was natural, arising from physical causes. *Browne*.

A horseshoe Baptista Porta hath thought too low a *signation*, he raised unto a lunary representation.

*Id.*

Scarce the dawning day began to spring, As, at a *signal* given, the streets with clamours ring.

*Dryden*.

Persons *signally* and eminently obliged, yet missing of the utmost of their greedy designs in swallowing both gifts and giver too, instead of thanks for received kindnesses, have betook themselves to barbarous threatenings. *South*.

Many, who have endeavoured to *signalize* themselves by works of this nature, plainly discover that they are not acquainted with arts and sciences.

*Addison*.

The Thames frozen twice in one year, so as men to walk on it, is a very *signal* accident. *Swift*.

Some one eminent spirit, having *signaled* his valour and fortune in defence of his country, or by popular arts at home, becomes to have great influence on the people. *Id.*

**SIGNALS BY THE DRUM**, made use of, in the exercise of the army, instead of the word of command, viz.

## S I G N A L S.

Signals.	Operations.
A short roll . . .	To caution.
A flam . . .	{ To perform any distinct thing.
To arms . . .	{ To form the line or battalion.
The march . . .	{ To advance, except when intended for a salute.
The quick march.	To advance quick.
The point of war.	To march and charge.
The retreat . . .	To retreat.
Drum ceasing . . .	To halt.
Two short rolls . .	{ To perform the flank firing.
The dragoon march.	To open the battalion.
The grenadier march.	To form the column.
The troop . . .	To double divisions.
The long roll . . .	To form the square.
The grenadier march.	{ To reduce the square to the column.
The preparative . .	To make ready and fire.
The general . . .	To cease firing.
Two long rolls . .	{ To bring or lodge the colors.

**SIGNALS, NAVAL.** When we read the account of an engagement, or other interesting operations of an army, our attention is generally so much engaged by the results that we give but little heed to the movements which led to them, and produced them, and we seldom form any distinct notion of the conduct of the day. But a professional man follows every regiment in its movements, endeavours to see their connexion, and the influence which they have had on the fate of the day, and even to form to himself a general notion of the whole scene of action. He looks with the eye of the general. But few trouble themselves farther about the narration. The movement is ordered; it is performed; and the fortune of the day is determined. Few think how all this is brought about; and when they are told that, during the whole of the battle of Custrin, Frederic the Great was in the upper room of a country inn, whence he could view the whole field, while his aids-de-camp, on horseback, waited his orders in the yard below, they are struck with wonder, and can hardly conceive how it can be done; but, on reflection, they see the possibility of the thing. Their imagination accompanies the messenger from the inn yard to the scene of action, where the general's orders are delivered and executed. But when we think on the situation of the commander of a fleet, confined on board one ship, and this ship as much, or more closely, engaged than any other of the fleet; and when we reflect that here are no messengers ready to carry his orders to ships of the squadron at the distance of miles from him, and to deliver them with precision and distinctness, and that, even if this were possible by sending small ships or boats, the vicissitudes of wind and weather may render the communication so tedious that the favorable moment may be irretrievably lost before the order can be conveyed; when we think of all these circumstances, our thoughts are bewildered, and we are ready to imagine that a sea-battle is nothing but the unconnected struggle of individual ships; and that when the admiral has once ‘Cried havoc, and let slip the dogs of war,’ he has done all that his situation empowers him to do, and he must leave the fate of the day to the bravery and skill of his captains and sailors. Yet it is in this situation, apparently the most unfavorable, that the orders of the commander can be conveyed with a despatch that is not attainable in the operations of a land army. The scene of action is unencumbered, so that the eye of the general can behold the whole without interruption. The movements which it is possible to execute are few, and they are precise. A few words are sufficient to order them, and then the mere fighting the ships must always be left to their respective commanders. This simplicity in the duty to be performed has enabled us to frame language fully adequate to the business in hand, by which a correspondence can be kept up as far as the eye can see. This is the language of signals, a language by writing, addressed to the eye, and which he that runneth may read. As in common writing certain arbitrary marks are agreed on to express certain sounds used in speech, or rather, as in hieroglyphics certain arbitrary marks are agreed on to express certain thoughts, or the subjects of these thoughts; so here certain exhibitions are made, which are agreed on to express certain movements to be executed by the commander to whom they are addressed, and all are enjoined to keep their eyes fixed on the ship of the conductor of the fleet, that they may learn his will. It is scarcely possible for any number of ships to act in concert, without some such mode of communication between the general and the commanders of private ships.

**HISTORY OF NAVAL SIGNALS.**—We have no direct information in the naval tactics of the ancient nations, how the Greeks and Romans managed their signals; but the necessity of the thing is so apparent that we cannot suppose it to have been omitted by the most ingenious and the most cultivated people who have appeared on the great theatre of the world; and we are persuaded that Themistocles, Conon, and other renowned sea commanders of Athens, had signals by which they directed the movements of their fleet. One signal was invented so early as the reign of king Ægeus; but so little were the Athenian tars then accustomed to signals that Theseus forgot to change it, and so the king perished. See ÆGEUS. We find, in the history of the Punic wars by Polybius, frequent allusions to such a mode of communication; and Ammianus Marcellinus speaks of the speculatores and vexillarii who were on board the ships in the Adriatic. The coins both of Greece and Rome exhibit both flags and streamers. In short, we cannot doubt of the ancients having practised this hieroglyphical language. In the naval occurrences of modern Europe, mention is frequently made of signals. We find, in particular, that queen Elizabeth, on occasion of the expedition to Cadiz, ordered her secretaries to draw up instructions, which were to be communicated to the admiral, the general, and the five councillors of war, and by them to be copied and transmitted to the several ships of

the navy, not to be opened till they should arrive in a certain latitude. It was on this occasion, says our historian Guthrie, ‘that we meet with the first regular set of signals and orders to the commanders of the English fleet.’ But, till the movements of a fleet have attained some sort of uniformity, regulated and connected by some principles of propriety, and agreed on by persons in the habit of directing a number of ships, we may with confidence affirm that signals would be nothing but a parcel of arbitrary marks, appropriated to particular pieces of naval service, such as attacking the enemy, landing the soldiers, &c., and that they would be considered merely as referring to the final result, but by no means pointing out the mode of execution, or directing the movements which were necessary for performing it. It was James II., when duke of York, who first considered this practice as capable of being reduced into a system, and who saw the importance of such a composition. He, as well as the king his brother, had always showed a great predilection for the sea service; and, when appointed admiral of England, he turned his whole attention to its improvement. He had studied the art of war under Turenne, not as a pastime, but as a science, and was a favorite pupil of that most accomplished general. When admiral of England, he endeavoured to introduce into the maritime service all those principles of concert and arrangement which made a number of individual regiments and squadrons compose a great army. When he commanded in the Dutch war, he found a fleet to be little better than a collection of ships, on board of each of which the commander and his ship’s company did their best to annoy the enemy, but with very little dependence on each other, or on the orders of the general: and, in the different actions which the English fleet had with the Dutch, every thing was confusion as soon as the battle began. The famous pensionary De Witt, who from a statesman became a navigator and a great sea commander in a few weeks, made the same representation to the States General on his return from his first campaign. In the Memoirs of James II., written by himself, we have the following passage: ‘1665. On the 15th of March the duke of York went to Gunfleet, the general rendezvous of the fleet, and hastened their equipment. He ordered all the flag officers on board with him every morning, to agree on the order of battle and rank. In former battles, no order was kept, and this, under the duke of York, was the first in which fighting in a line and regular form of battle was observed.’ This must be considered as full authority for giving the duke of York the honor of the invention. For, whatever faults may be laid to the charge of this unfortunate prince, his word and honor stand unimpeached, and we are anxious to vindicate his claim to it, because our neighbours the French, as usual, would take the merit of this invention, and of the whole of naval tactics, to themselves. True it is that Colbert, the great and justly celebrated minister of Louis XIV., created a navy for his ambitious and vain-glorious master, and gave it a constitution which may be a model for other nations to copy. By his encouragement, men of

the greatest scientific eminence were engaged to contribute to its improvement; and they gave us the first treatises of naval evolutions. But it must ever be remembered that our accomplished, though misguided sovereign, was then residing at the court of Louis; that he had formerly acted in concert with the French as commander and flag officer, and was at this time aiding them with his knowledge of sea affairs. In the memorable day of La Hogue, the gallant Russel, observing one of Tourville’s movements, exclaimed, ‘there! they have got Pepys among them.’ It was on this occasion, then, that the duke of York made the movements and evolutions of a fleet the object of his particular study, reduced them to a system, and composed that ‘System of Sailing and Fighting Instructions’ which has ever since been considered as the code of discipline for the British navy, and which has been adopted by our rivals and neighbours as the foundation of their naval tactics. It does great honor to its author, although its merit will not appear very eminent to a careless surveyor, on account of that very simplicity which constitutes its chief excellence. It is unquestionably the result of much sagacious reflection and painful combination of innumerable circumstances, all of which have their influence; and it is remarkable that, although succeeding commanders have improved the subject by several subordinate additions, no change has to this day been made in its general principles or maxims of evolution. Till some such code be established, it is evident that signals can be nothing but arbitrary and unconnected hieroglyphics, to be learned by rote, and retained by memory, without any exercise of the judgment; and the acquisition of this branch of nautical skill must be a more irksome task than that of learning the Chinese writing. But, such a code being once settled, the character in which it may be expressed becomes a matter of rational discussion. Accordingly, the sailing and fighting instructions of the duke of York were accompanied by a set of signals for directing the chief or most frequent movements of the fleet. These also were contrived with so much judgment, and such attention to distinctness, simplicity, and propriety, that there has hardly been any change found necessary; and they are still retained in the British navy as the usual signals in all cases when we are not anxious to conceal our movements from an enemy. Notwithstanding this acknowledged merit of the duke of York’s signals, it must be admitted that great improvements have been made on this subject, considered as an art. The art military has, in the course of a century past, become almost an appropriate calling, and has therefore been made the peculiar study of its professors. Our rivals, the French, were sooner, and more formally placed in this situation, and the ministers of Louis XIV. took infinite and most judicious pains to make their military men superior to all others by their academical education. A more scientific turn was given to their education, and the assistance of scientific men was liberally given them; and all the nations of Europe must acknowledge some obligations to them for information on every thing connected with the art of war. They

have attended very much to this subject, have greatly improved it, and have even introduced a new principle into the art; and thus have reduced it to the most simple form of reference to the code of sailing and fighting instructions, by making the signals immediately expressive, not of orders, but of simple numbers. These numbers being prefixed to the various articles of the code of instructions, the officer who sees a signal thrown out by the admiral reads the number, and reports it to his captain, perhaps without knowing to what it relates. Thus simplicity and secrecy, with an unlimited power of variation, are combined. M. de la Bourdonnais, a brave and intelligent officer, during the war 1758, was the author of this ingenious thought.

We do not propose to give a system of British signals. This would evidently be improper. But we shall show our readers the practicability of this curious language, the extent to which it may be carried, and the methods which may be practised in accomplishing this purpose. This may make it an object of attention to scientific men, who can improve it; and the young officer will not only be able to read the orders of the commander in chief, but will not be at a loss should circumstances place him in a situation where he must issue orders to others. Signals may be divided into, I. Day signals; II. Night signals; and, III. Signals in a fog. They must also be distinguished into, 1. Signals of evolution addressed to the whole fleet, or to squadrons of the fleet, or to divisions of these squadrons; 2. Signals of movements to be made by particular ships; and, 3. Signals of service, which may be either general or particular. The great extent of a large fleet, the smoke in time of battle, and the situation of the commander-in-chief, who is commonly in the midst of the greatest confusion and hottest fire, frequently makes it very difficult for the officers of distant ships to perceive his signals with distinctness. Frigates, therefore, are stationed out of the line, to windward or to leeward, whose sole office it is to observe the admiral's signals, and instantly to repeat them. The eyes of all the signal officers in the private ships of war are directed to the repeating frigates, as well as to the admiral; and the officers of the repeating frigates, having no other duty, observe the admiral incessantly, and, being unembarrassed by the action, can display the signal with deliberation, so that it may be very distinctly seen. Being minutely acquainted with the substitutions which must be made on board the admiral when his masts and rigging are in disorder, his (perhaps imperfect) signal is exhibited by the repeating frigate in its proper form, so as to be easily understood. And, to facilitate this communication, the commanders of the different squadrons repeat the signals of the commander in chief, and the commanders of division repeat the signals of the commanders of their squadron. Every evolution signal is preceded by a signal of advertisement and preparation, which is general, and frequently by a gun, to call attention; and, when all the signals have been made which direct the different parts of that evolution, another signal is made, which marks the close of the complete signal, and di-

vides it from others which may immediately follow it: and, as the orders of the commander-in-chief may relate either to the movements of the whole fleet, those of a single division, or those of certain private ships, the *executive signal*, which dictates the particular movement, is accompanied by a *directive signal*, by which these ships are pointed out to which the order is addressed. The commander of the ship to which any signal is addressed is generally required to signify by a signal, which is general, that he has observed it. And, if he does not thoroughly understand its meaning, he intimates this by another general signal. And here it is to be observed that, as soon as the signal is answered by the ships to which it is addressed, it is usual to haul it down, to avoid the confusion which might arise from others being hoisted in the same place. The order remains till executed, notwithstanding that the signal is hauled down. It may happen that the commander who throws out the signal for any piece of service sees reasons for altering his plan. He intimates this by a general *annulling* signal, accompanying the signal already given. This will frequently be more simple than to make the signals for the movements which would be required for re-establishing the ships in their former situation. All these things are of very easy comprehension, and require little thought for their contrivance. But, when we come to the particular evolutions and movements, and to combine these with the circumstances of situation in which the fleet may be at the time, it is evident that much reflection is necessary for framing a body of signals which may be easily exhibited, distinctly perceived, and well understood, with little risk of being mistaken one for another. We shall take notice of the circumstances which chiefly contribute to give them these qualities as we proceed in describing their different classes.

**DAY SIGNALS.**—These are made by means of the ship's sails, or by colors of various kinds. Those made with sails are but few in number, and are almost necessarily limited to the situation of a fleet at anchor. Thus,

The following Signals	usually signify.
Main top-gallant stay-sail hoisted	Officers and men belonging to the ship to come on board.
Fore top-sail loose	To prepare for sailing.
Main top-sail loose	To unmoor.
Main top-sail sheets hauled home	To weigh.
Main top-sail sheets clewed up, and the yard hoisted	Annull the former signal, and the ship to come to an anchor.
Top-gallant sails loose, and the sheets flying	Discovering strange sails.
Main top-gallant sail loose and hoisted.	Recal ships in chase.
Top-sail yard down.	
Mizen top-sail hoisted, and the sheets clewed up.	Moor.

Before we proceed to the description of the signals by means of colors, such as flags, banners (or triangular flags), pendants, or vanes, we must take notice of the ostensible distinctions, of the various divisions and subdivisions of a fleet, so that we may understand how the same signal may be addressed to a squadron, division, or single ship or ships. We suppose it known that a fleet of ships of war is distributed into three grand divisions, which we shall term squadrons, called the van, centre, and rear. These denominations have not always a relation to the one being more advanced than the other, either towards the enemy, or in the direction of their course. In a land army, the position of every part is conceived from its reference to the enemy; and the reader, conceiving himself as facing the enemy, easily understands the terms van, centre, and rear, the right and left wing, &c. But, the movements of a sea army having a necessary dependence on the wind, they cannot be comprehended unless expressed in a language which keeps this circumstance continually in view. The simplest and most easily conceived disposition of a fleet, is that in which it is almost indispensably obliged to form in order to engage an enemy. This is a straight line, each ship directly a-head of its neighbour, and close hauled. This is therefore called the line of battle. In this position the two extremities of the fleet correspond to the right and left wings of an army. Suppose this line to be in the direction east and west, the wind blowing from the N. N. W., and therefore the fleet on the starboard tack; the ships' heads are to the west, and the westernmost division is undoubtedly the van of the fleet, and the easternmost division is the rear. And it is in conformity to this arrangement, and situation, that the *list of the fleet* is drawn up. But the ships may be on the same east and west line, close hauled, with their heads to the west, but the wind blowing from S. S. W. They must therefore be on the larboard tack. The same ships, and the same division, are still, in fact, the van of the fleet. But, suppose the ships' heads to be to the eastward, and that they are close hauled, having the wind from S. S. E. or N. N. E., the ships which were the real van, on both tacks in the former situation, are now, in fact, the rear on both tacks; yet they retain the denomination of the van squadron of this fleet, and are under the immediate direction of the officer of the second rank, while the other extremity is under the direction of the third officer. This subordination therefore is rather an arrangement of rank and precedence than of evolution. It is, however, considered as the natural order to which the general signals must be accommodated. For this reason the division which is denominated van, in the list of this fleet, is generally made to lead the fleet when in the line of battle on the starboard tack, and to form the weathermost column in the order of sailing in columns; and, in general, it occupies that station from which it can most easily pass into the place of the leading division on the starboard line of battle a-head. Although this is a technical nicety of language, and may frequently puzzle a landsman in reading an account of naval operations, the reflecting and intelligent reader will see the

propriety of retaining this mode of conceiving the subordinate arrangement of a fleet, and will comprehend the employment of the signals which are necessary for re-establishing this arrangement, or directing the movements while another arrangement is retained. This being understood, it is easy to contrive various methods of distinguishing every ship by the place which she occupies in the fleet, both with respect to the whole line, with respect to the particular squadron, the particular division of that squadron, and the particular place in that division. This may be done by a combination of the position and color of the pendants and vanes of each ship. Thus the color of the pendants may indicate the squadron; their position or mast on which they are hoisted may mark the division of that squadron; and a distinguishing vane may mark the place of the private ship in her own division. The advantages attending this method are many. In a large fleet it would hardly be possible for the commander-in-chief to find a sufficient variety of single signals to mark the ship to which an order is addressed, by hoisting it along with the signal appropriated to the intended movement. But by this contrivance one-third part of these signals of address is sufficient. It also enables the commander-in-chief to order a general change of position by a single signal, which otherwise would require several. Thus, suppose that the fore, main, and mizen masts, are appropriated, with the proper modifications, for exhibiting the signals addressed to the van, the centre, and the rear squadrons of the fleet, and that a red, a white, and a blue flag, are chosen for the distinguishing flags of the officers commanding these squadrons; then, if the commander-in-chief shall hoist a red flag at his mizen top-gallant mast head, it must direct the van squadron to take the position then occupied by the rear squadron, the evolution necessary for accomplishing this end, being supposed known by the commander of the *squadron*, who will immediately make the necessary signals to the squadron under his particular direction. In the same manner, the distinguishing signal for the leading ship of a squadron being hoisted along with the signal of address to the whole fleet, and the signal for any particular service, will cause the three or the nine leading ships to execute that order, &c. &c. All that has been said hitherto may be considered as so many preparations for the real issuing of orders by the commander-in-chief. The most difficult part of the language remains, viz. to invent a number of signals which shall correspond to that almost infinite variety of movements and services which must be performed. Distinctness, simplicity, and propriety, are the three essential qualities of all signals. A signal must be some object easily seen, strongly marked, so that it may be readily understood, with little risk of its being mistaken for another. When made by flags, banners, or pendants, they must be of the fullest colors, and strongest contrasts. The ships are frequently at a very great distance, so that the intervening air occasions a great degradation of color. They are seen between the eye and a very variable sky; and in this situation, especially in the morning or evening, or a dark day, it is not easy to

distinguish one full color from another, all of them approaching to the appearance of a black. At the distance of a very few miles hardly any full colors can be distinguished but a scarlet and a blue. Red, blue, yellow, and white, are the colors which can be distinguished at greater distances than any others, and are therefore the only colors admitted as signals. Even these are sometimes distinguished with difficulty. A yellow is often confounded with a dirty white, and a blue with a red. All other dark colors are found totally unfit. But, as these afford but a small variety, we must combine them in one flag, by making it striped, spotted, or chequered, taking care that the opposition of color may be as great as possible, and that the pieces of which the flags are made up may not be too minute. Red must never be striped nor spotted with blue, and the stripes, pots, or chequers, should never be less than one-third of the breadth of the flag. Their colors are represented by hatching, in the same manner as in heraldry. See HERALDRY. Difference of shape, as flags, banners, or pendants, is another distinction by which the expression may be varied. And, in doing this, we must recollect that in light winds it may be difficult to distinguish a flag from a banner, as neither are fully displayed for want of wind to detach the fly from the staff. And, lastly, signals may be varied by their position, which may be on any lofty and well detached part of the masts, yards, or rigging. Simplicity is an eminent property in all signals. They are addressed to persons not much accustomed to combinations, and who are probably much occupied by other pressing duties. It were to be wished that every piece of service could be indicated by a single flag. This is peculiarly desirable with respect to the signals used in time of battle. The rapid succession of events on this occasion call for a multitude of orders from the commander-in-chief, and his ship is frequently clad over with flags and pendants, so that it is exceedingly difficult for the signal officer of a private ship to distinguish the different groups, each of which make a particular signal. These considerations are the foundation of a certain propriety in signals, which directs us to a choice among marks which appear altogether arbitrary. Signals which run any risk of being confounded, on account of some resemblance, or because their position hinders us from immediately perceiving their difference, should be appropriated to pieces of service which are hardly possible to be executed, or can hardly be wanted in the same situation. No bad consequence could easily result, though the signal for coming to closer action should resemble that for unmooring, because the present situation of the ships makes the last operation impossible or absurd. Such considerations direct us to select for battle signals those which are of easiest exhibition, are the most simple, and have the least dependence on the circumstance of position; so that their signification may not be affected by the damages sustained in the masts or rigging of the flag ship. Such signals as are less easily seen at a distance should be appropriated to orders which can occur only in the middle of the fleet, &c., &c. Signals which are made to the admiral

by private ships may be the same with signals of command from the flag-ship, which will considerably diminish the number of signals perfectly different from each other. With all these attentions and precautions, a system of signals is at last made up, fitted to the code of sailing and fighting instructions. It is accompanied by another small set for the duty of convoys. It must be engrossed in two books; one for the officer of the flag-ship, who is to make the signals, and the other is delivered to every private ship. In the first the evolutions, movements, and other operations of service, are set down in one column, and their corresponding signals in another. The first column is arranged, either alphabetically, by the distinguishing phrase, or systematically, according to the arrangement of the sailing and fighting instructions. The officer whose duty it is to make the signals, turns to this column for the order which he is to communicate, and in the other column he finds the appropriated signal. In the other book, which is consulted for the interpretation of the signals, they are arranged in the leading column, either by the flags, or by the places of their exhibition. The first is the best method, because the derangement of the flag-ship's masts and rigging in time of action may occasion a change in the place of the signal. The Tactique Navale of the chevalier de Morogues contains a very full and elaborate treatise on signals. We recommend this work to every sea-officer, as full of instruction. The art of signals has been greatly simplified since the publication of this work, but we cannot but ascribe much of the improvements to it. We believe that the author is the inventor of that systematic manner of addressing the order or effective signal to the different squadrons and divisions of the fleet, by which the art of signals is made more concise, the execution of orders is rendered more systematic, and the commanders of private ships are accustomed to consider themselves as parts of an army, with a mutual dependence and connexion. We are ready enough to acknowledge the superiority of the French in manoeuvring, but we affect to consider this as an imputation on their courage. Nothing can be more unjust; and dear-bought experience should long ere now have taught us the value of this superiority. What avails that courage which we would willingly arrogate to ourselves, if we cannot come to action with our enemy, or must do it in a situation in which it is almost impossible to succeed, and which needlessly throws away the lives of our gallant crews? Yet this must happen, if our admirals do not make evolutions their careful study, and our captains do not habituate themselves, from their first hoisting a pendant, to consider their own ship as connected with the most remote ship in the line. We cannot think that this view of their situation would in the least lessen the character which they have so justly acquired, of fighting their ship with a courage and firmness unequalled by those of any other nation. And we may add that it is only by such a rational study of their profession that the gentleman can be distinguished from the mercenary commander of a privateer.

*Night signals.*—It is evident that the com-

munication of orders by night must be more difficult and more imperfect than by day. We must, in general, content ourselves with such orders as are necessary for keeping the fleet together, by directing the more general movements and evolutions which any change of circumstances may render necessary. And here the division and subordinate arrangement of the fleet is of indispensable necessity, it being hardly possible to particularise every ship by a signal of address, or to see her situation. The orders are therefore addressed to the commanders of the different divisions, each of whom is distinguished by his poop and top-lights, and is in the midst of, and not very remote from, the ships under his more particular charge. Yet, even in this unfavorable situation, it is frequently necessary to order the movements of particular ships. Actions during the night are not uncommon. Pursuits and rallyings are still oftener carried on at this time. The common dangers of the sea are as frequent and more disastrous. The system of signals therefore is very incomplete till this part be accomplished. Night signals must be made by guns, or by lights, or by both combined. Gun-signals are susceptible of variety both in number and in disposition. The only distinct variation which can be made in this disposition is by means of the time elapsed between the discharges. This will easily admit of three varieties, slow, moderate, and quick. Half-minute guns are as slow as can easily be listened to as appertaining to one signal. Quarter-minute guns are much better, and admit of two very distinct subdivisions. When the gunners, therefore, are well trained to this service (especially since the employment of fire-locks for cannon), intervals of fifteen or twelve seconds may be taken for slow firing, eight or ten seconds for moderate, and four or five seconds for quick firing. If these could be reduced one-half, and made with certainty and precision, the expression would be incomparably more distinct. A very small number of firings varied in this way will give a considerable number of signals. Thus five guns, with the variety of only quick and moderate, will give twenty very distinguishable signals. The same principle must be attended to here as in the flag-signals. The most simple must be appropriated to the most important orders, such as occur in the worst weather, or such as are most liable to be mistaken. Quick firing should not make part of a signal to a very distant ship, because the noise of a gun at a great distance is a lengthened sound, and two of them, with a very short interval, are apt to coalesce into one long continued sound. This mode of varying gun-signals by the time must therefore be employed with great caution, and we must be very certain of the steady performance of the gunners. Note, that a preparatory signal, or advertisement that an effectual signal is to be made, is a very necessary circumstance. It is usual (at least in bad weather) to make this by a double discharge, with an interval of half a second, or at most a second. Gun-signals are seldom made alone, except in ordinary situations and moderate weather; because accident may derange them, and inattention may cause them to escape notice, and, once

made, they are over, and their repetition would change their meaning. They are also improper on an enemy's coast, or where an enemy's cruisers or fleets may be expected. Signals by lights are either made with lights, simply so called, i. e. lanterns shown in different parts of the ship, or by rockets. Lights may differ by number, and by position, and also by figure. For the flag-ship, always carrying poop or top lights, or both, presents an object in the darkest nights, so that we can tell whether the additional lights are exhibited about the mainmast, the foremast, the mizzenmast, &c. And if the lights, shown from any of these situations are arranged in certain distinguishable situations in respect to each other, the number of signals may be greatly increased. Thus three lights may be in a vertical line, or in a horizontal line, or in a triangle, and the point of this triangle may be up, or down, or forward, or aft, and thus may have many significations. Lights are also exhibited by false fires or rockets. These can be varied by number, and by such differences of appearance as to make them very distinguishable. Rockets may be with stars, with rain fire, or simple squibs. By varying and combining these, a very great number of signals may be produced, fully sufficient to direct every general movement or evolution, or any ordinary and important service. The chevalier de Morogues has given a specimen of such a system of night signals, into which he has even introduced signals of address or direction to every ship of a large fleet; and has also given signals of number, by which depths of soundings, points of the compass, and other things of this kind, may be expressed both easily and distinctly. He has made the signals by rockets perfectly similar in point of number to those by lanterns, so that the commander can take either; a choice which may have its use, because the signals by rockets may cause the presence of a fleet to be more extensively known than may be convenient. The commander-in-chief will inform the fleet by signal, that guns, or perhaps rockets, are not to be used that night. This signal, at the same time, directs the fleet to close the line or columns, that the light signals may be better observed. It is indeed a general rule to show as few lights as possible; and the commander frequently puts out his own poop and top lights, only showing them from time to time, that his ships may keep around him. The signal lanterns on board the flag-ship, and a lantern kept in readiness on board of every private ship, to answer or acknowledge signals from the commander-in-chief, are all kept in bags, to conceal their lights till the moment they are fixed in their places, and the preparatory or advertising signal has been made. The commander-in-chief sometimes orders by signal every ship to show a light for a minute or two, that he may judge of the position of the fleet; and the admiral's signal must always be acknowledged by those to whom it is addressed. It is of particular importance that the fleet kept together. Therefore the leading ships of the fleet, on either tack, are enjoined to acknowledge the signals of the commander-in-chief by a signal peculiar to their station. Thus the commander-in-chief learns the position of the extre-

mities of his fleet. In framing a set of night signals, great attention must be given to their position, that they be not obscured by the sails. The nature of the order to be given will frequently determine this. Thus an order for the rear ships to make more sail, will naturally direct us to exhibit the signal at the mizen peak; and so of other pieces of service. Lanterns, exposed in groups, such as triangles, lozenges, &c., are commonly suspended at the corners of large frames of laths, at the distance of a fathom at least from each other. Attempts have been made to show lights of different colors; but the risk of mistake or failure in the composition, at the laboratory, makes this rather hazardous. Colored lanterns are more certain; but, when the glasses are made of a color sufficiently intense, the vivacity of the light (which at no time is very great) is too much diminished. Besides, the very distance changes the color exceedingly and unaccountably.

*Signals in a fog.*—These can be made only by noises, such as the firing of cannon and muskets, the beating of drums and ringing of bells, &c. Fog signals are the most difficult to contrive of any, and are susceptible of the least variety. The commander in chief is principally concerned to keep his fleet together; and, unless something very urgent requires it, he will make no change in his course or rate of sailing. But a shift of wind or other causes may make this necessary. The changes which he will order, it will be prudent to regulate by some fixed rule, which is in general convenient. Thus, when a fleet is in the order of sailing upon a wind, and a fog comes on, the fleet will hold on the same course. If the wind should come a little more on the beam, the fleet will still keep close to the wind. Certain general rules of this kind being agreed on, no signals are necessary for keeping the fleet together; and the ships can separate or run foul of each other only by difference in their rate of sailing, or by inaccurate steerage. To prevent this the commander-in-chief fires a gun from time to time, and the ships of the fleet judge of his situation and distance by the sound. The commanders of divisions fire guns, with some distinction from those of the commander-in-chief. This both informs the commander-in-chief of the position of his squadrons, and enables the private ships of each division to keep in the neighbourhood of their own flag ship. On board of every private ship the drum is beaten, or the bell is chimed, every quarter of an hour, according as the ship is on the starboard or larboard tack. By such contrivances it is never difficult to keep a fleet in very good order when sailing on a wind. The wind is almost always moderate, and the ships keep under a very easy sail. It is much more difficult when going large, and separation can be prevented only by the most unwearyed attention. The greatest risk is the falling in with strange ships steering another course. But evolutions and other movements are frequently indispensable. The course must be changed by tacking or wearing, and other services must be performed. None, however, are admitted but the most probable, the most simple, and the most necessary. The com-

mander-in-chief first informs the fleet, by the preparatory fog signal, that he is about to order an evolution, and that he is to direct it by fog signals. This precaution is indispensable to prevent mistakes. Along with this advertising signal he makes the signal of the movement intended. This not only calls the attention of the fleet, but makes the ships prepare for the precise execution of that movement. The commanders of divisions repeat the advertising signal, which informs their ships of their situation, and the private ships beat their drums or chime their bells. Thus the whole ships of the fleet close a little, and become a little better acquainted with their mutual position. It is now understood that a movement is to be made precisely a quarter of an hour after the advertisement. At the expiration of this time, the effective signal for this movement is made by the commander-in-chief, and must be instantly repeated by the commanders of divisions, and then the movement must be made by each ship, according to the sailing and fighting instructions. This must be done with the utmost attention and precision, because it produces a prodigious change in the relative position of the ships: and, even although the good sense of the commander-in-chief will select such movements for accomplishing his purposes as produce the smallest alterations, and the least risk of separation or running foul of each other, it is still extremely difficult to avoid these misfortunes. To prevent this, as much as possible, each ship which has executed the movement, or which has come on a course thwarting that of the fleet, intimates this by a signal properly adapted, often adding the signal of the tack on which it is now standing, and even its particular signal of recognition. This is particularly incumbent on the flag ships and leading ships of each division. After a reasonable interval, the commander-in-chief will make proper signals for bringing the fleet to a knowledge of their re-union in this new position. This must serve for a general account of the circumstances which must be attended to in framing a code of signals. The arbitrary characters in which the language is written must be left to the sagacity of the gentlemen of the profession. It must be observed that the stratagems of war make secrecy very necessary. It may be of immense hazard if the enemy should understand our signals. In time of battle it might frequently frustrate our attempts to destroy them, and at all times would enable them to escape, or to throw us into disorder. Every commander of a squadron, therefore, issues private signals, suited to his particular destination; and therefore it is necessary that our code of signals be susceptible of endless variations. This is exceedingly easy without any increase of their number. The commander needs only intimate that such and such a signal is so and so changed in its meaning during his command. We cannot leave this article without returning to an observation which we made almost in the beginning, viz. that the system of signals, or, to speak more properly, the manner of framing this system, has received much improvement from the gentlemen of the French navy, and particularly from the ingenious thought of M. de la Bourdonnais, of making the

signals the immediate expressions of numbers only, which numbers may be afterwards used to indicate any order whatever. We shall present our readers with a scheme or two of the manner in which this may be done for all signals, both day, night, and fog. This alone may be considered as a system of signals, and is equally applicable to every kind of information at a distance. Without detracting in the smallest degree from the praise due to M. de la Bourdonnais, we must observe that this principle of notation is of much older date. Bishop Wilkins, in his Secret and Swift Messenger, expressly recommends it, and gives specimens of the manner of execution; so does Dr. Hooke in some of his proposals to the Royal Society. Gaspar Schottus also mentions it in his Technica Curiosa; and Kircher, among others of his Curious Projects. M. de la Bourdonnais's method is as follows: He chooses pendants for his effective signals, because they are the most easily displayed in the proper order. Several pendants, making part of one signal, may be hoisted by one halyard, being stopped on it at the distance of four or six feet from each other. If it be found proper to throw out another signal, at the same time and place, they are separated by a red pendant without a point. His colors are chosen with judgment, being very distinctly recognised, and not liable to be confounded with the addressing signals appropriated to the different ships of the fleet. They are,

For No. 1. Red.

2. White.
3. Blue.
4. Yellow.
5. Red, with white tail.
6. Red, with blue tail.
7. White, with blue tail.
8. White, with red tail.
9. Blue, with yellow tail.
10. Yellow, with blue tail.

Three sets of such pendants will express every number under 1000, by hoisting one above the other, and reckoning the uppermost hundreds, the next below it tens, and the lowest units. Thus the number 643 will be expressed by a pendant red with blue tail, a yellow pendant below it, and a blue one below the last. This method has great advantages. The signals may be hoisted in any place where best seen, and therefore the signification is not affected by the derangement of the flag ship's masts and rigging. And, by appropriating the smaller numbers to the battle signals, they are more simple, requiring fewer pendants. As this method requires a particular set of colors, it has its inconveniences. An admiral is often obliged to shift his flag, even in time of action. He cannot easily take the colors along with him. It is therefore better to make use of such colors as every private ship is provided with. One set of eleven will do, with the addition of three, at most of four pendants, of singular make, to mark 100, 200, 300, 400. Two of these flags, one above the other, will express any number under 100, by using the eleventh as a substitute for any flag that should be repeated. Thus the eleventh flag, along with the flag for 8 or for 6, will express the number 88 or 66,

&c. Thus we are able to express every number below 500, and this is sufficient for a very large code of signals. And, in order to diminish as much as possible the number of these compound signals, it will be proper that a number of single flag signals be preserved, and even varied by circumstances of position, for orders which are of very frequent occurrence, and which can hardly occur in situations where any obstructions are occasioned by loss of masts, &c. And farther, to avoid all chance of mistake, a particular signal can be added, intimating that the signals now exhibited are numerary signals; or, which is still better, all signals may be considered as numerary signals; and those which we have just now called single flag signals may be set down opposite to, or as expressing the largest numbers of the code. This method requires the signal of advertisement, the annulling signal, the signal of address to the particular ship or division, the signal of acknowledgment, the signal of indistinctness, of distress, of danger, and one or two more, which, in every method, must be employed. Another method of expressing numbers with fewer colors is as follows:—Let the flags be A, B, C, D, E, F, and arrange them as follows:

A	B	C	D	E	F
1	2	3	4	5	6
A	7	8	9	10	11
B	13	14	15	16	17
C	19	20	21	22	23
D	25	26	27	28	29
E	31	32	33	34	35
F	37	38	39	40	41

The number expressed by any pair of flags is found in the intersection of the horizontal and perpendicular columns. Thus the flag D, hoisted along with and above the flag F, expresses the number 40, &c. In order to express a greater number (but not exceeding 84) suppose 75, hoist

the flags C, which expresses 33, or 75, wanting 42, and above them a flag or signal G, which alone expresses 42. This method may be still farther improved by arranging the flags thus:

A	B	C	D	E	F
1	2	3	4	5	6
A	7	8	9	10	11
B	—	13	14	15	16
C	—	—	18	19	20
D	—	—	—	22	23
E	—	—	—	—	25
F	—	—	—	—	27

In this last method the signification of the signal is totally independent of the position of the flags. In whatever parts of the ship the flags D and E are seen, they express the number twenty-three. This would suit battle signals. Another method still may be taken. Flags hoisted any where on the fore-mast may be accounted units, those on the main-mast tens, and those on the mizen-mast hundreds. Thus numeral signals may be made by a ship dismasted, or having only poles in their place. Many other ways may be contrived for expressing numbers by colors, and there is great room for exercising the judgment of the

contriver. For it must always be remembered, that these signals must be accompanied with a signal by which it is addressed to some particular ship or division of the fleet, and it may be difficult to connect the one with the other, which is perhaps shown in another place, and along with other executive signals. One great advantage of these numeral signals is, that they may be changed in their signification at pleasure. Thus, in the first method, it can be settled that, on Sundays, the colors A, B, C, D, &c., express the cyphers 1, 2, 3, 4, &c., but that on Mondays they express the cyphers 0, 1, 2, 3, &c., and on Tuesdays the cyphers 9, 0, 1, 2, &c.; and so on through all the days of the week. This mean of secrecy is mentioned by Dr. Hooke for the coast and alarm signals, where, by the bye, he shows a method for conveying intelligence over land very similar to what is now practised by the French with their telegraph. It is equally easy to express numbers by night signals. Thus M. de la Bourdonnais proposes that one discharge of a great gun shall express 7, and that 1, 2, 3, 4, 5, 6, shall be expressed by lights. Therefore, to express twenty-four, we must fire three guns and show three lights. This is the most perfect of all forms of night and fog signals. For both the manner of firing guns and of exhibiting lights may be varied to a sufficient extent with a very few guns or lights, and with great distinctness. Thus, for guns, let F mark the firing of a single gun at moderate intervals, and ff a double gun, that is, two discharged at the interval of a second. We may express numbers thus:—

1	F,
2	F, F.
3	F, F, F.
4	F, F, F, F.
5	F, ff.
6	F, F, ff.
7	F, ff, F.
8	F, ff, F, F.
9	F, ff, F, ff.
10	ff.
100, &c.	ff, ff, or ffff.

It might be done with fewer guns if the ff were admitted at the first firing. But it seems better to begin always with the single gun, and thus the double gun beginning a signal, distinguishes the tens, &c. In like manner, a small number of lights will admit of a great variety of very distinct positions, which may serve for all signals to ships not very remote from the commander-in-chief. For orders to be understood at a very great distance, it will be proper to appropriate the numbers which are indicated by signals made with rockets. These can be varied in number and kind to a sufficient extent, so as to be very easily distinguished and understood. It is sufficient to have shown how the whole, or nearly the whole, notation of signals may be limited to the expression of numbers. We have taken little notice of the signals made by private ships to the commander-in-chief. This is a very easy business, because there is little risk of confounding them with other signals. Nor have we spoken of signals from the flag-ships, whose ultimate interpretation is number, as when ships are

directed to change their course so many points. Those also are easily contrived in any of the methods already described: also when a private ship wishes to inform the commander-in-chief that soundings are found at so many fathoms. In like manner, by numbering the points of the compass the admiral can direct to chase to any one of them, or may be informed of strange ships being seen in any quarter, and what is their number.

The following are some of the principal significations now in use:

1. To denote being on the starboard tack.
2. To denote being on the larboard tack.
3. To anchor.
4. To denote being anchored, half an hour after.
5. To moor, or, if before moored, to unmoor.
6. To weigh.
7. To tack.
8. To haul to the wind on the starboard tack.
9. To haul to the wind on the larboard tack.
10. To wear, the sternmost and leewardmost ships first in succession, and continue in the same situation, of sailing, or lying-to as before.
11. To alter course to starboard.
12. To alter course to larboard.
13. To lie-to on the starboard tack.
14. To lie-to on the larboard tack.
15. On discovering danger.
16. If in distress and in want of immediate assistance.
17. On striking and sticking fast on a shoal.

In the Instructions, it is observed, that the signal guns will be all fired to windward, or on the same side during the continuance of a fog.

The admiral, in the execution of his intentions to tack, wear, &c., will not begin to change his situation until ten minutes after the respective signals shall have been made, except upon any extraordinary emergency: meaning thereby to allow a sufficient time for the ships near him to be prepared for the same movement. In case of a sudden shift of wind, or wind springing up after a calm, and not being then favorable for continuing the course before steered, or that the admiral thinks proper to steer a different course; on such occasions he will make the signals for lying-to or the signals for sailing by the wind on either tack that will best correspond with his further intentions. And, if the wind by such alteration becomes favorable for sailing large on the course he intends to steer, he will soon after signify, by the proper signal, the number of points he means to steer from the wind on either tack accordingly.

During a fog, the admiral will continue the same course on which he was steering before the fog commenced, whilst the wind continues favorable for enabling him to do so: but if it comes a-head when before sailing large, or before the wind, he will keep the wind with a full sail, not to go more than three knots an hour. If the wind decreases, he will make sail in proportion, for continuing his former rate of sailing, except by setting studding-sails. If the fleet is to bring to under the top-sail, the main top-sail will be to the mast. If under courses, it will be with

the main-sail, and the fore-yard braced up. When in the channel, or on a coast, and the signal is made for anchoring, the ships are to anchor immediately. And it is to be remembered that the firing of muskets in volleys, is to denote the being anchored; it should, therefore, be continued some time in each ship, until there is reason to think the whole or greater part of the fleet have anchored. The repeating frigates are not to repeat signals during a fog.

SIGNALS, COMPASS (Fr. *compas de signaux*), are made with certain flags and pendants, and occasionally used as auxiliaries to the Numerical day signals to be hereafter noticed. When any general signal is accompanied with either of the compass signals, expressive of a particular point, the direction in which the ships are to proceed, to carry the purpose of such signal into execution, is meant to be thereby denoted; as when the signal is made to chase, to alter course, &c. On strange ships being discovered (and so of any other occasion when the bearing is necessary to be made known), the quarter is to be denoted by the proper compass signal; and, when answered by the admiral, the compass signal is to be hauled down once for each strange ship seen; or the number may be indicated by a numeral signal.

John M'Arthur, esq. LL. D., formerly secretary to admiral lord Hood, made various improvements in day and night signals, as well as telegraphic communications. That is, early in the year 1790, he laid before the earl of Chatham, then first lord of the admiralty, a code of day signals, combining a tabular and numerical plan, on very simple principles, and susceptible of great variety and extent of ideas. He observes, in his introduction, ‘that having been frequently stationed during the American war to observe signals in fleets, and with a view of obviating the difficulties that frequently arose from showing flags at a particular part of a ship, as well as for facilitating the signification of all signals, it had been the pursuit of his leisure moments since the year 1782; when he first digested a compendium on a plan analogous, though not mature, and presented it to admiral Digby, then commander-in-chief of his majesty's ships and vessels in North America.

‘The precise execution,’ he observes, ‘of all naval evolutions, is attainable by the good order and discipline of the respective ships, and a harmonious and speedy compliance with the signals. It is this which gives force and agility to the movements of a fleet, uniting or separating the divisions, or the bodies composing it, according to the exigencies of the moment; and the fewer evolutions that are put in execution in presence of an enemy the better, unless with a view of obtaining an advantageous position, to arrange the fleet in line of battle. In the formation or change of positions, in all evolutions with large bodies, there must at times occur, in the best disciplined fleets, a temporary disunion, separation, or irregularity of some of the ships, in getting into that compact order necessary.

‘The order of sailing, in as compact an order as the weather will permit, is essential for the

due observance of signals, and for forming with celerity and precision the line of battle. In fleets from twelve to twenty sail, the order of sailing is generally in three squadrons or divisions, and, in fleets consisting of twenty-four to thirty-six sail of the line, the order of sailing is usually in six divisions; for it is a known truth in naval, as well as in military tactics, that the more compact or collected the order of sailing in divisions, or the order of march of armies in columns, are adhered to in approaching an enemy, the more power and agility they will have in the arrangement for action. As, therefore, the regularity and prompt execution of all naval evolutions depend on the nice observation and speedy understanding of ideas attached to signals, it was Mr. M'Arthur's aim to simplify them, though combining different plans, and to divest them of every ambiguity and misunderstanding. For that purpose, he not only devised the plan of signals alluded to, by partly uniting to the methodical ideas of Locke on his Common-place Book, a numerical moveable index of the flags; but also had arranged and classed all signals under eight general and relative heads, viz.

1. Anchoring.
2. Calling officers and boats.
3. Chasing.
4. Convoy and prizes.
5. Fighting evolutions.
6. Sailing evolutions.
7. Private ships' signals to the admiral.
8. Miscellaneous.

The compartments or leaves of the book appropriated to these heads respectively were subdivided alphabetically into the emphatical words, or purport of the signals, connected with the general heads; thus serving as an index, incorporated with the table of flags and significations, for the admiral's greater promptitude and facility in making the necessary signals, as well as for private ships immediately referring to the significations indicated.

The signals are comprised into two tables opening from the centre of the book. The tabular flags used are only twelve in number, which, with the aid of an auxiliary or substitute flag, to save the expense of having duplicate flags, express 312 literal significations (independent of a vast variety of signals in a numeral sense to be hereafter noticed), being more than is required for any code of navy signals. The plan being simple and homogeneous, no pendants nor triangular flags are requisite, either for denoting the points of the compass, duty of launches and boats, or for distinguishing signals, denoting particular squadrons, divisions, &c., of the fleet. The whole, as well as private ships' signals, are compressed into one code, &c., indicated by thirteen flags only, instead of thirty flags, besides a variety of pendants and triangular flags, &c., as were formerly, and are still used in the navy.

There is also a consideration of some importance recommended in the adoption of this plan, namely, that the captain of every private ship in the fleet, being at all times furnished with the thirteen established signal flags, may on any emergency be immediately detached on a particular service, and thereby as a commanding officer can communicate his ideas, in the language of signals, with the same facility he was

accustomed to obey them, while in a subordinate situation.\*

Each table has twelve leaves annexed, corresponding to the number of tabular flags, and each page or leaf is subdivided into twelve different compartments, on a line with the flags denominated inferior, for the more speedy finding the signification of any signal. Flags of any color or description may be used, but the twelve tabular flags selected for this code are not only such as are capable of expressing a second arrangement of distinct signals when inverted† or reversed, but have also two colors contrasted in each flag, as are best seen at a distance, and according to the ascertained observations on the change or vicissitudes of the atmosphere, namely, red and white, blue and white, yellow and white.

In the proper order of hoisting the signals, the red, blue, or yellow color of the flag, is always uppermost, or next the mast; in the inverted or reversed order, the white part of the flag, is uppermost, or next the mast. In the first table the flags are shown proper, and in the second they are exhibited inverted or reversed. Hence twelve tabular flags, with a substitute flag, indicate, as already noticed, 312 literal significations; and, by way of illustration, the first table is exhibited in plate SIGNALS, comprising 156 numbers, referring to signals composed in sentences or distinct significations. The same flags, inverted and reversed, form a second table (which, being easily understood, it is not necessary to explain by a plate), making with the former 312 significations, besides the numerary and alphabetic plans of which the code is susceptible, indicating upwards of 20,000 additional ideas, all of which are illustrated by examples given in the introduction to these signals.

Explanation of the plate exhibiting the twelve tabular flags in the proper order,‡ with the substitute flag.

The twelve flags are exhibited horizontally in the upper column, and these identical flags are again shown vertically in the lateral or left side column, and the substitute is shown separately at the bottom. The numbers from one to twelve, placed immediately under the upper column of flags, not only denote signals, appropriated to single flags, but are indices to refer to the compartments of significations allotted to each of the superior flags, whether hoisted singly or with an inferior flag.

\* It was usual to furnish captains of private ships with certain flags only for making signals to the admiral, but they were not supplied with the general signal-flags of the commander-in-chief; consequently no junior officer could be detached on any service without much detriment and inconvenience.

† The term inverted is to be understood when a flag is shown upside down; namely, half red and half white horizontally divided, will be inverted when the white is shown uppermost.—Reversed is applied when a flag is turned the contrary way to the mast, or where it is hoisted, namely, a red and white, divided vertically, is reversed when the white part is next to the mast.

‡ Red color is indicated in the plate of flags by vertical strokes or lines, blue by horizontal strokes, and yellow by small dots.

The superior flags, with the index numbers attached, have the intervening leaves cut transversely, in order to exhibit at one view the compartment or leaf, on which the signification corresponding to the signal made is to be found, where, casting the eye on the lateral or side column flag, the signification is instantly found.

Each table has twelve leaves annexed; that is, one leaf of paper for each flag, and each page or leaf is divided horizontally by lines of separation for the written signification of signals into thirteen compartments. The superior flags with index numbers being cut transversely, in the form of a merchant's alphabet to a ledger; and the flags in the lateral columns being painted in their proper colors, on the twelfth leaf back from the opening of the table are, by this contrivance, always in view with the superior flag, both in front and whatever part of the book may be turned to; therefore when any signal is made, suppose with two flags, the observer has only to place his thumb on the upper flag; and turning over to its compartment, and looking on the left for the inferior, he will instantly find the same number as is shown in the angle of meeting in the table, or opening of the book, as well as the signification of the signals; while, to prevent mistakes, he has at the same time the superior and inferior flags of the signal constantly in view.

Thus, for example, if flag B were hoisted superior, and flag M inferior; or, in other words, if No. 2, blue and white flag in the upper column, was placed over No. 1, red and white in the lateral column, the number 25 will be found in the corresponding angle or square of the table; and, by placing the thumb on the superior flag B, you turn over the cut leaves immediately to the page where the literal signification of the signal to the corresponding number twenty-five is expressed, in a line to the inferior flag M. If the same superior flag B were hoisted with the substitute flag, or which, in other words, implies in this tabular form a duplicate of the superior, the number 26 will be found in the angle of meeting, and the signification is written at length on the page back, on a line facing the duplicate or inferior flag on the side column; hence the substitute is here used merely to stand in the place of a duplicate flag, and giving a value to the tabular numbers as expressed in the angles of meeting or squares of the table. Thus the signals expressing the tabular numbers 13, 26, 39, 52, 65, 78, 91, 104, 117, 130, 143, and 156, have the superior and lateral flags represented as of the same denomination, the substitute in these instances is to be always hoisted inferior, as standing in place of a duplicate of the superior flag; but in the numerary application of the plan to be hereafter noticed, the substitute will express a repetition of the superior flag in corresponding units.

When the substitute flag is hoisted alone, in the tabular plan, it signifies annulling the preceding signal; and, by being hoisted superior to any of the other twelve flags, it may be appropriated to particular signals, independent of the tabular or numeral ones.

The twelve flags, by being painted in duplicates

on silk or vellum, may be made to shift or slide on thin box-wood attached to the upper and lateral columns, in order that the order or place of the flags may be changed or transposed to different numbers, when the admiral may think it necessary, so that nothing need be apprehended from the code of signals falling into the hands of an enemy. In this respect the substitute flag may, when hoisted over any other flag, indicate the transposition of that tabular flag to the place of No. 1, and the other eleven flags are to follow such change of place in the progressive order they stand, whereby the tabular system, with respect to flags indicating numbers, becomes totally changed, while the original significations of the signals remain permanent.\*

*Numerary and alphabetic combinations, with the thirteen flags of the table in the plate*.—The plan is not confined solely to the simple tabular form already explained, and which would suffice to denote a greater number of signals than has heretofore been practised in the navy; but it is susceptible of a numerary combination capable of expressing 20,000 additional ideas, applicable to so many words of a dictionary or vocabulary regularly numbered from 1, to 20,000. The letters of the alphabet can also be easily denoted, by applying as marked in the table the signals first in order from 1 to 26 inclusive. This is so obvious that it requires no further explanation. For the better understanding of the numerary combination, reference will be first made to the ten flags numbered in the lateral column from one to ten, which, with the aid of the substitute, can express 10,000 signals, by hoisting the flags in the proper order as represented; and, when these flags are shown inverted or reversed, 10,000 additional ideas can be denoted.

1. *With one or two flags*.—The signal flags from 1 to 9, hoisted singly, will express their corresponding numbers as units, and flag 10 is to be considered the cypher flag. When two flags are shown at the same time, the one hoisted superior will express tens, and the under one units: thus flag 2 over flag 4 would express 24: flag 3 over flag 10, or cypher, would express 30: and flag 4 hoisted over the substitute would denote 44. The substitute in this combination being always considered a repetition in units of the number immediately above it; the signals, therefore, that can be expressed by one or two flags are 99 in number.

2. *With three flags*.—When three flags are shown at the same time, the superior denotes hundreds, the next tens, and the lower one units. Thus, if 346 were to be expressed, flag 3 would be hoisted superior for hundreds, the flag 4 next for tens, and flag 6 for units; consequently, the number of signals, with the combination of three flags, will be 999 in number.

3. *With four flags*.—When four flags are

shown, at the most conspicuous parts of a ship, the superior flag will denote thousands, and the three others hundreds, tens, and units, as in the preceding article. The number of signals, with the combination of four flags, will be 9999 in number.

*Additional substitute flags*.—Having assigned one substitute flag for the first combination with two flags, which for distinction's sake is termed the integral substitute, it is proper that a second and third should be assigned to the other combinations, so as to leave no chasm in the progressive numbering of hundreds and thousands; therefore the flag 11, with the letter W prefixed, is termed the decimal substitute, when three flags, including it, are hoisted: and flag 12, with the letter X prefixed, is termed the centesimal substitute when four flags are hoisted.

*Example with three flags*.—If 333 were to be expressed, flag 3 would be hoisted uppermost; next to it the decimal substitute, and the lowest would be the integral substitute.

*Example with four flags*.—If 4444 were to be denoted, the flag 4 would be superior, the centesimal substitute next, then the decimal and integral substitutes. If 4044, the cypher-flag would be under flag 4 the superior, then the decimal and integral substitutes, and so on of the other numbers wherever a substitute flag was necessary to the last in the combination; namely, 9999, which would be expressed by flag 9 superior to the three substitutes in their proper order.

To complete the series to 10,000, the cypher-flag is to be hoisted superior to the three substitutes in their natural order.

By inverting or reversing the numerical flags, the value of 10,000 is added to each signal, whereby 10,000 additional ideas on the same principles can be expressed; consequently, the two arrangements, with only thirteen flags, will denote 20,000 signals or words of a dictionary.

*Example in the inverted order of the tabular flags*.—If 10,023 were to be expressed, it would only be necessary to hoist flag 2 inverted over flag 3, also inverted. To denote 10,123, the three flags 1, 2, 3, would be inverted. To denote 12,345, the superior flag 2 for so many thousands would be shown inverted, next flag 3 would be shown inverted, then the diagonal flags 4 and 5 would be shown reversed; that is, the white part next the mast, and so forth, always bearing in mind that by this order of inverting or reversing the flags, there are 10,000 added to the original numbers which the signals would otherwise express, if the flags were hoisted in the original or proper order.

The above plan of tabular and numerary signals was illustrated by plates containing a variety of essential evolutions in the order of sailing and lines of battle. But although it was allowed to possess great ingenuity, and met with a favorable reception from the admiralty, there appears to have been an insurmountable obstacle to its adoption, principally, it was said, arising from a numerary plan of day signals digested by earl Howe, then in contemplation to have been brought into general practice, when an opportunity offered.

\* This suggestion of a transposition-flag was afterwards adopted in the New Arrangement of lord Howe's Signals, prepared by Mr. M'Arthur in 1792; and a single flag was then appropriated to that purpose.

*Alterations and improvements to the code of day and night signals now established in the navy.—In the Spanish armament of 1790, and Russian armament of 1791, earl Howe's day signals, printed in quarto, with instructions, also his night signals, were issued to his majesty's ships under the orders of admiral lord Hood, commander-in-chief, then also one of the lords commissioners of the admiralty. In the summer of 1792, when a rupture with the French republic was apprehended, lord Hood was appointed to the command of a squadron in the Channel, ‘for the purpose of exercising the officers and men in the order of battle, and of sailing, and other duties in their several stations, which might best qualify them for service, preparatory to and in battle against an enemy.’*

During this service, in which a squadron of fifteen sail, including frigates, was exercised in the various evolutions indicated by earl Howe's day signals, Mr. M'Arthur, the admirals secretary, turned his attention to render them more simple and perspicuous, by preparing a new arrangement, in which several important alterations and additions were incorporated, drawn from the code which he had, as already noticed, presented two years antecedently to the admiralty. From motives of respect and delicacy towards earl Howe, sir Hyde Parker, then acting as captain of the fleet under lord Hood, transmitted to the former a copy of Mr. M'Arthur's explanatory observations on the proposed new arrangement of day signals and instructions. The whole having been subsequently laid before the lords commissioners of the admiralty, they were approved of and printed in the latter end of 1792, under Mr. M'Arthur's superintendence, with all the alterations and additions he had suggested, together with a new code of night signals, he had at the same time compiled, and submitted for approval.

From that period these day signals and instructions, together with the new code of night signals alluded to, and to be hereafter noticed, have been issued to his majesty's ships, with little or no variation in form or substance. The following being the principal heads of the explanatory observations prefixed to the new arrangement of lord Howe's signals, submitted to the admiralty, they will suffice to give the reader a competent idea of the improvements suggested, and which were ultimately adopted.

*Signal book.—1. The column of purport in earl Howe's quarto Signal Book is proposed to be done away entirely, and a copious alphabetical and numerical index substituted; the present arrangement, therefore, may be printed in a convenient octavo size, with as large a type as lord Howe's quarto impression.*

2. By leaving a small blank space on the outer margin of the leaves, the index to the signals and instructions, as well as the numbers on each page, may be exhibited in the form cut out in the accompanying Signal Book; whereby both books become at once arranged either for a flag or private ship. Similar attention has been paid to private ships' signals, to which is added a numerical index, whereby signals are made with facility, and their significations found without any further arrangement.

3. Every signal has immediate reference to the article relative to it in the Instruction Book; and, that the articles may not be mistaken for the pages, they are always referred to in Roman numerals. The like is attended to in the indices, and the numbers of the signals are placed in figures on the left hand, so as not to be mistaken for the pages referred to on the right.

4. Instead of the leaves formerly allotted to the supplemental flags, they are now exhibited to view on two pages only, under the title of Single Flags appropriated to particular Signals independent of the Numerals; therefore no number or article is attached to them as formerly, but the purport of each retained, by which it is distinguished when referred to, either in the Signal or Instruction Book; thus, affirmative flag, annulling flag, rendezvous, preparative, &c.

5. The single flags appropriated to particular signals being arranged as in the preceding article, the numeral signals are made to commence at No. 1, instead of No. 13, as formerly in lord Howe's code, and from 13 the numbers and significations follow as heretofore.

6. To the end that the numbers and significations may be permanent, and to remove every apprehension of their being useful to the enemy in case of getting possession of them in this regular form, in the accompanying model of a signal board, the numerical flags, painted in a duplicate order, are made to change or slide, with observations on an additional signal proposed to be inserted in the department allotted. Single flags (namely, by the introduction of what is called a key or transposition flag, which, when hoisted, denotes that the numeral or integral flag hoisted under it is to be transposed or changed to the upper place allowed, No. 1;) and the other eight integral flags are to follow such change of place in the progressive order they stand, whereby the numeral system becomes totally changed. This suggestion may, perhaps, on a due consideration, be deemed worthy of adoption.

7. The table of triangular flags, page 6, Signal Book, is proposed to be substituted for the former one, as being more simple in form.

8. In some signals it has been thought necessary to insert a N. B. illustrative of them taken from the Instructions; such as signals 4, 24, 25, &c., whereby signals that formerly appeared on a perusal of the Instructions only, are now brought forward to view in the proper departments of the respective signals.

9. Should the new signals 10, 11, and 12, relative to enforcing the general station signal, No. 4, not be deemed essential, they may remain blanks, or be appropriated for other significations.

10. If the Signal Book were printed on stout paper, and half bound, it would admit the margin to be cut out in the form submitted, with great regularity, as alphabetical and numerical indices, and be equally adapted for a commander-in-chief to make signals, as well as private ships to refer immediately to the significations indicated. Eight plates are annexed of the most essential evolutions, with instructions on the principal movements. These are entirely new, and have been introduced for the reasons to be noticed in the subsequent article.

## INSTRUCTION BOOK TO THE DAY SIGNALS.

All the instructions are arranged and consolidated in one book under general heads, having a copious alphabetical index annexed; and it is humbly submitted, whether it may not be deemed proper to print this Instruction Book in folio, as a size more convenient than octavo for being left open on a table under either of the general heads or running titles corresponding to the situation of the fleet; for were it printed octavo size, the same as the Signal Book, it would be too thick and bulky to remain open on a table. On the other hand, the necessity of having the Instruction Book carried on the quarter-deck seldom occurs, but the Signal Book is always necessary to have recourse to, and, as such, an octavo is the most convenient form for the latter, more particularly as the signals are now arranged for that purpose.

In order to avoid all ambiguity and confusion, one mode of technical expression has been adhered to, both in the Signal Book and Instruction; viz. squadrons, to express the three component parts of a fleet, either in the order of sailing or in line of battle: divisions, to express such parts into which squadrons may be divided either in the order of sailing by divisions, or in the line of battle: column is applied only to the fleet in the order of sailing in two columns or grand divisions.

The only chain of new matter that has been attempted to be introduced into earl Howe's General Instructions for Ships of War are the following instructions for the conduct of the fleet in the execution of the principal movements of the evolutions, which are illustrated by figures projected on principles consonant to those of the best naval tacticians, and in strict conformity to the ideas of lord Howe, diffused in his General Instructions. In the practice of evolutions it is obvious that rules for the execution of the movements of a fleet in order of battle are useful and requisite; and the want of which has been often regretted by flag-officers and captains, more especially, as a due observance of them will tend to make the squadrons or divisions move with promptitude and regularity in the order indicated by general signal.

I. Instructions for the conduct of the fleet in the execution of the principal movements of the evolutions, as referred to in the preceding explanatory observations.

When the admiral makes general signals, for any intended evolution, it is to be understood that the movements thereby indicated are to be put in execution the instant the preparative flag is hauled down, and the general signal left flying; and the respective commanders of squadrons, instead of repeating such general signals, are (so soon as conveniently may be after answering it) to prepare their squadrons to act together, or in succession, by putting abroad the signal corresponding to the established movements herein contained; and, when the admiral hauls down the preparative flag to the evolution, the commanders of squadrons are likewise to haul down the preparative to the movements, that the squadrons, divisions, or ships denoted may forthwith put the same in execution.

To the end that the squadrons or division may act with regularity and promptitude, in the formation of the evolution, indicated by general signal, and thereby preserve in all movements the compact order necessary, the subordinate flag-officers, and captains of ships respectively, are enjoined to adhere to the established instructions to the movements, and not to deviate from them unless upon some extraordinary emergency rendering the same expedient.

When the admiral would have the fleet form a line of battle, one ship a-head of another, he hoists a union flag on the mizen-peek, and fires a gun; and every flag-ship does the like. But when they are to form a line of battle, one abreast of another, he hoists a pendant with the union-flag, &c. When he would have the admiral of the white, or ship that commands in the second post, to tack, and endeavour to gain the wind of the enemy, he spreads a white flag under the flag at the main-topmast-head, and fires a gun; and when he would have the vice-admiral of the blue do so, he does the same with the blue flag. If he would have the rear-admiral of the red do so, he spreads a red flag from the cap on the fore-topmast-head, downward on the back-stay; if the vice-admiral of the blue, he spreads a blue flag, &c., and fires a gun. If he would have the rear-admiral of the red do so, he hoists a red flag at the flag-staff at the mizen-topmast head; if the rear-admiral of the white, a white flag; if the rear admiral of the blue, a blue flag, and under it a pendant of the same color, with a gun. If he be to leeward of the fleet, or any part of it, and he would have them bear down into his wake or grain, he hoists a blue flag at the mizen-peek, and fires a gun; and all the flag-ships are to do the same. The fleet being in a line of battle, if he would have the ship that leads the van hoist, lower fet, or hawl up any of her sails, he spreads a yellow flag under that at the mizen-topmast-head, and fires a gun, which signal the flag-ships are to answer; and the admiral will hoist, lower, fet, or hawl up the sail, which he would have the ship that leads the van do, which is to be answered by the flag-ships of the fleet. When the enemies retreat, and he would have the whole fleet follow them, he makes all the sail he can after them himself, and takes down the signal for the line of battle, and fires two guns out of his fore-chase, which the flag-ships answer; and then every ship is to endeavour to come up with, and board the enemy. When he would have the chase given over, he hoists a white flag at the fore-topmast-head, and fires a gun. If he would have the red squadron draw into a line of battle, one abreast of another, he puts abroad a flag, striped with red and white, on the flag-staff at the main-topmast-head, with a pendant under it, and fires a gun; if the white or second squadron is to do so, the flag is striped red, white, and blue; if the blue, or third squadron is to do so, the flag is a Genoese ensign and pendant; but if they are to draw into a line of battle, one a-head of another, the same signals are made with a pendant. If they are to draw into a line of battle, one a-stern of another, with a large wind, and he would have the leaders go with the starboard tacks, aboard the wind, he hoists a red and white

flag at the mizen-peek, and fires a gun; but if they should go with the larboard tack aboard by the wind, he hoists a Genoese flag at the same place, which signals, like others, must be answered by the flag-ships.

Before we enter on the subject of night signals, it may be advisable to notice a mode of preparing an artificial light for the purpose, which has generally been kept a secret. It is sold in wooden boxes; the fire produced from one of these boxes of six inches diameter, and four inches high, which was lighted by General Roy on the English coast, was seen very distinctly as M. Michain, with the naked eye, on the French coast, at the distance of forty miles over the sea, in overcast and cloudy weather.

The fire from another of these boxes, lighted by M. Legendre of Dunkirk, was seen with the naked eye by M. Cassini, at Cape *Blanc-nez*, as distinctly as the planet Venus when brightest, although the distance was 20,000 toises.

The powder was prepared in the following manner:—

Twenty-four parts of saltpetre, seven parts of flower of sulphur, and two parts of red arsenic, are pulverised and well mixed together. This mixture is inclosed in round or square boxes of thin wood; in general the height of the round box is half their diameter, and the square are made double the size of the round. They are closed with a cover of the same wood, in the middle of which a small hole is made, by which the powder is lighted.

When these boxes are made for carriage, paper is pasted all round them, and also over the hole in the lid, that the powder may not be scattered. When the box is lighted, the paper that covers the joining of the lid is first taken off, and then that which is over the hole; it is lighted with a common match, and takes fire in an instant, without explosion. It spreads a very brilliant light, with a little smoke, which the person who lights it must be careful to avoid; a box of six inches diameter, and three inches high, burns nearly for the space of three minutes, and the light may be perceived a little before sunset, at the distance of 36,000 toises. The light of this fire is so dazzlingly bright, that it effects the eyes of those who approach very near it, in the same manner as the sun, rendering them incapable of distinguishing objects for some time afterwards.

The price of this powder is nearly the same as common powder.

The matches are prepared as follows; four parts of refined saltpetre are pulverised, and well mixed with two parts of gunpowder, two parts of charcoal, and one part of flowers of sulphur; the whole is then passed through a sieve. This powder is put into paper cartridges the length of the quill of a pen, the cartridges are made of strong paper rolled round a stick two feet long, and the powder is pressed in with a piece of round wood of the same dimensions.

These matches are fastened to a stick of a suitable length, the edge of the paper is cut with scissars, and the match is lighted by a candle. The effect never fails, and the matches are proof against wind and rain. In order to extinguish them the lighted end must be cut off.

An artificer of Marseilles proposes to make these matches of a mixture of eight parts of flowers of sulphur, four of saltpetre, and two of gunpowder, the whole reduced to a fine powder, and well mixed together.

Another mode by which night-signals may be made, with advantage to the service, must also be advertized to. It consists in the employment of oxygen and hydrogen gasses, impelled, when in a state of combustion, against a conical piece of chalk. This process is of a purely chemical nature, and the laboratory mode of producing light by this means would be perfectly inapplicable at sea. The chemist employs two japanned copper tanks floating in water, and the pressure of the water displaces the gas. Now this apparatus is not sufficiently stable for nautical purposes;—it will be necessary, therefore, to have the gases condensed in strong iron receivers, and the openings connected with the gas burners defended with safety tubes.

When well-burned Carvara marble is made into a thin paste, it is almost equal to pure chalk, both in the intensity of its light and the purity of its colour. Lime from chalk, however, admits of being turned in the lathe so that any number of small balls with a slender stem of the same material, uniform in size, and perfect in figure, may be kept ready for use. The surface of the ball, by the continued action of the heat, is nearly in a state of fusion during the whole operation. With an apparatus of this kind a distance of thirty or forty miles is no bar to the most accurate reading of the signals. The plan was, we believe, first adopted by Lieutenant Drummond in the great trigonometrical survey of England.

#### NIGHT SIGNALS.

*Observations on the numerary night signals established in the navy:—*—The code of night-signals now used had been chiefly arranged from a plan devised by that ornament to his profession the late admiral Kempfent, on numerary principles, by the combination of guns, lights, and false fires. Sir Hyde Parker, captain of the fleet under admiral lord Hood, having in his possession admiral Kempfent's ideas of MS., relative to this new mode of communicating signals in the night, and which from his lamented death had not been brought to maturity; they were put into the hands of Mr. M'Arthur, secretary to the commander-in-chief, at the time he was as already noticed preparing, in the autumn of 1792, a new arrangement of earl Howe's Day Signals and Instructions, to be submitted to the consideration of the admiralty. From these original sources, Mr. M'Arthur presented to the lords commissioners of the admiralty in a digested form, with some alterations and additions, the Numerary Code of Night Signals alluded to.

Admiral Kempfent having left no instructions to his plan, the principal part of earl Howe's old Night Instructions was very judiciously selected, so far as was applicable to the New Code of Night Signals; but some additional instructions were deemed necessary to complete the

arrangement. These night signals and instructions, thus prepared and comprised, with indices, in one small octavo volume, were then adopted, and have ever since been used in his majesty's navy. As it may be deemed improper to give publicity to these night signals, or to exhibit in this work a detail of the principles on which they are founded, suffice it to observe that the utility of the plan, compared to that formerly in practice by showing lights at particular parts of a ship, or in the form of triangles, squares, or lozenges, where best seen, is too obvious to be dwelt upon; yet, when a fleet is in the presence of an enemy, it may be proper to make signals in the night by lights only.

Lord Hood, knowing well how to appreciate every improvement in naval tactics, was the first commander-in-chief of a fleet who issued to the flag-officers of squadrons and captains of ships under his orders, at the commencement of the war in 1793, the New Arrangement of Day and Night Signals above noticed; and their utility since that period has been confirmed by the practice and experience of every successive commander-in-chief. From the observations of many intelligent officers, it was found that the code of numerary night signals, although it had advantages in some respects over every other known mode practised, yet there was a desideratum sought after, namely, to give privacy to night signals when in expectation of falling in with an enemy, or approximating the line of an enemy's coast. It is, therefore, the object of the following auxiliary plan, proposed by Mr. M'Arthur, to remedy the disadvantages that might eventually result by firing guns, as the component part of the numerary combination to night signals, and which may still be continued as the standing system, when the fleet is not in expectation of falling in with the enemy. This can be effected by the combinations of four distinct lights, without the aid of guns or false fires; and the mode proposed will have the superadded advantage of being occasionally employed as a nocturnal telegraph, for naval or military purposes.

*General principles to be adopted.*

1. An improvement in the construction of signal lanterns; and, as only four are required for each ship, they ought to be issued as an article of store by the navy office.

2. The signals are to be made from on board ship where best seen, forward or abaft; or if a ship be directly a-head or a-stern of other ships to whom these signals are to be communicated. The signal lanterns may be shown at the larboard and starboard yard-arms, where best seen; but, if used on shore, the left hand post or signal staff, and the right hand post or staff, are to be considered synonymous terms to the application, at sea, of forward and abaft, or larboard and starboard yard-arms.

3. The combination of two, three, or four lights, shown at sea forward or abaft, or at the larboard and starboard yard-arms; but, if on

shore, hoisted on the left post or right, together with one or two obscurations of the lights, either in a horizontal or vertical position, will denote more ideas than is required for any code of night signals.

The lanterns are to be made in a cylindrical form; dimensions about nine inches diameter, and proportionable height. A lamp with four burners is to be placed in a socket in the centre, and so constructed that, if a lantern should happen to be upset, the oil cannot be spilt. Instead of horn or glass to the lanterns it is proposed to substitute tare, or what is commonly known by the name of Muscovy glass, which is equally as transparent as common glass, is much lighter, and will not consume by fire.

Each lantern to have an obscurer of tin or canvas, to denote the combinations to be hereafter explained. These obscurers to be in the form of cylinders, perforated with air-holes at the tops and open at the bottoms so as to encircle or cover the lanterns, and thereby eclipse the lights when necessary.

The obscurations, or eclipses, of the lights, are thus practised with facility:—Suppose the four lights hoisted vertically, or one over the other, at the usual distance of ten or twelve feet asunder, each lantern to have its obscurer placed from five to six feet over it, and, by a line passing through a small block attached to the lantern halyards, any of the lights at the word of command would be obscured. In exposing the light again, it is only necessary to haul the topping line of the obscurer, while the lantern remains in the same permanent situation.

The lanterns and mode of obscuring the lights being premised, the plan is susceptible of the following arrangement:—The first will denote, as by preparatory signal, that the combinations are to be applied telegraphically, to the letters of the alphabet. The second arrangement will denote, by preparatory signal, the first twenty-five numbers allotted to the significations in the standing Night Signal book for the navy, and in order to express fifty additional numbers, making in all seventy-five signals, which is more than the numerary code with guns, lights, and false-fires comprehend, an obscuration of one light for an interval of twenty or thirty seconds will denote the numbers from 26 to 50 inclusive; and the obscuration of two lights will denote the numbers from 51 to 75 inclusive, as expressed in the following table:—The open cyphers, thus  $\circ$ , in the annexed table, denote the lights shown, and the shaded ones, thus  $\bullet$ , denote the lights obscured or eclipsed.

It is to be observed that, when one or two lights are to be obscured, the lights composing the signal are first shown for a few minutes; then one or two lights, as indicated in the table, to be obscured for twenty or thirty seconds, and which is to be repeated by showing the lights again until answered and understood by the ships to which the signal may be addressed.

TABLE exhibiting the Letters of the Alphabet, and Seventy-five Numeral Signals, by the Combination of Four Lights, shown and obscured.

		Lights, where shown.		Lights shown, and 1 obscured.		Lights shown, and 2 obscured.			
Letters.	No.	Forward.	Aft.	No.	Forward.	Aft.	No.	Forward.	Aft.
A	1	○○		26	●○		51	●●	
B	2	○○○		27	●○○		52	●●○	
C	3	○○○○		28	●○○○		53	●●○○	
D	4		○○	29		●○	54		●●●
E	5		○○○	30		●○○	55		●●○○
F	6		○○○○	31		●○○○	56		●●○○○
G	7	○		32	●	○	57	●	●●
H	8	○○		33	●○	○	58	●●	○
I, J,	9	○○	○○	34	●○	○○	59	●●	○○
K	10	○○○	○	35	●○○	○	60	●●○○	○
L	11	○	○○	36	●	○○○	61	○	●●●
M	12	○	○○○	37	●	○○○○	62	○	●●○○
N	13	○	○○	38	●	○○	63	○	●●
O	14	○○	○	39	●○	○	64	●	○
P	15	○○	○○	40	●○○	○	65	●●	○○
Q	16	○○	○○	41	○	○○○	66	●	○○○
R	17	○○	○○	42	●○	○○	67	●●	○○○
S	18	○○		43	●○		68	●●	
T	19		○○	44		●○	69		●●●
U	20	○○		45	●○○	○	70	●●	○
V	21		○○	46		●○○○	71		●●○○
W	22	○○		47	●○○	○	72	●●○	○
X	23	○	○○	48	○	●○○	73	○	●●○
Y	24	○○○		49	○○○		74	●●○	
Z	25		○○○○	50		●○○○	75		●●○○○

A TABLE of the number of GUNS, LIGHTS, and BLUE LIGHTS, employed to express numbers, which refer to certain significations, as set forth in the following table.

Guns.	Blue-Lights.	Lights.	Numbers.	
1	—	—	0	One gun to call the attention of the fleet.
—	—	1	1	A general acknowledgment that the signal is understood.
—	—	2	2	Stand upon the starboard tack.
—	—	3	3	Stand upon the larboard tack.
—	—	4	4	Annul the foregoing signal.
—	1	—	5	To show my situation.
—	1	1	6	Heave to upon the starboard tack.
—	1	2	7	Heave to upon the larboard tack.
—	1	3	8	Make sail.
—	1	4	9	Shorten sail.
2	—	—	10	We are overpressed with sail.
2	—	1	11	Headmost ship shorten sail.
2	—	2	12	Request to speak the commodore.
2	—	3	13	Continue as before, although the commodore acts otherwise.
2	—	4	14	We have carried away a top-mast, or top-sail-yard.
2	—	1	15	We see danger.
2	1	1	16	A stranger is in the fleet.
2	1	2	17	Show no light.
2	1	3	18	Haul two points to starboard.
2	1	4	19	Haul two points to port.
3	—	—	20	North.
3	—	1	21	North-east.
3	—	2	22	East.
3	—	3	23	South-east.
3	—	4	24	South.
3	1	—	25	South-west.
3	1	1	26	West.
3	1	2	27	North-west.
3	1	3	28	
3	1	4	29	
4	—	—	30	

*Explanation of the table.*—Each lantern-light to four expresses 1, 2, 3, 4, respectively. One blue-light expresses 5. Two guns express 10, three guns express 20, and four guns 30. To express any number, therefore, as for instance 19, fire two guns, burn one blue-light, and hoist four vertical lights where they can best be seen.

Previous to making any of the first nine signals, which do not require guns to express the number, one gun will be fired to draw the attention of the fleet, and in making the remaining signals, the necessary guns will be fired to draw the attention of the fleet previous to hoisting the lights, or burning the blue-light. To prevent a confusion of lights, when a signal is made from the commodore, the top light will be covered.

It is recommended to use glass signal-lanterns, as horn admits a very dull light. Such lanterns should be well strengthened down the sides, and be provided with a secure ring at the bottom as well as at the top, for the convenience of bending them to each other; and to the top ring of three of the signal-lanterns a tack should be fitted, about a fathom long, to admit their being bent to each other with regularity and despatch.

SIGNAL, PREPARATORY (Fr. signal préparatoire), a signal given by the admiral to the whole, or any part of his fleet, and is immediately answered by those to whom it is directed; by showing the same signal, to testify that they are

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ready to put his orders in execution. Having observed their answer, he will show the signal which is to direct their operations: as, to chase, to form the line, to begin the engagement, to board, to double upon the enemy, to rally or return to action, to discontinue the fight, to retreat and save themselves. The dexterity of working the ships in a fleet depends on the precise moment of executing these orders; and on the general harmony of their movements: a circumstance which evinces the utility of a signal of preparation.

As the extent of the line of battle, and the fire and smoke of the action, or other circumstances in navigation, will frequently prevent the admiral's signals from being seen throughout the fleet, they are always repeated by the officers next in command; by ships appointed to repeat signals; and, finally, by the ship or ships for which they are intended.

The ships that repeat the signals, besides the chiefs of squadrons or divisions, are usually frigates lying to windward or to leeward of the line. They should be extremely vigilant to observe and repeat the signals, whether they are to transmit the orders of the commander-in-chief, or his seconds, to any part of the fleet, or to report the fortunate or distressful situation of any part thereof. By this means all the ships from the van to the rear will, unless disabled, be ready

at a moment's warning, to put the admiral's designs in execution.

To preserve order in the repetition of signals, and to favor their communication, without embarrassment, from the commander-in-chief, to the ship for which they are calculated, the commanders of the squadrons repeat after the admiral; the chiefs of the divisions, according to their order in the line, after the commanders of the squadrons; and the particular ships after the chiefs of the divisions; and those in return, after the particular ships, and vice versa, when the object is to convey any intelligence from the latter to the admiral.

*Signal of attack or assault, in the land service* (Fr. signal d'une attaque, ou d'un assaut). This signal may be given in various ways: by the discharge of a lighted shell, by sky-rockets, by colors displayed from a conspicuous spot, &c. In 1747 marshal Lowendbal made use of lighted shells or bombs, when he laid siege to the town of Bergen-op-zoom. During the consternation of the inhabitants, which was excited by a continual discharge of these signal shells, the grenadiers entered a practicable breach, and took the town by storm.

*Signals made by the colors of an army* (Fr. signaux des enseignes).—The ancients had recourse to all the various methods which could be used by signals, to express the particular situation of affairs, and to indicate measures that should be adopted. If, during an engagement, victory seemed inclined more to one side than another, the colors belonging to the victorious party were instantly bent towards its yielding antagonist. This signal was conspicuous to the men, and excited them to fresh efforts. They imbibed the most lively hopes of success, and eagerly pressed forward to reap the advantages of bravery and good conduct. When an army was hard pressed by its enemy the colors of the former were raised high in air, and were kept in a perpetual flutter and agitation, for the purpose of conveying to the soldiers that the issue of the battle was still doubtful, and that nothing but courage and perseverance could determine the victory. If, in the heat of action, any particular regiment seemed to waver and give way, so as to cause an apprehension that it might finally be broken, its colors were instantly snatched out of the bearer's hands by the general or commanding officer, and thrown into the thickest of the enemy. It frequently happened that the men who were upon the point of yielding ground and flying received a fresh impulse from this act, rallied, and, by a desperate effort of courage, recovered the colors, and restored the day. This method of reanimating their legions was generally resorted to by the Romans. We have had instances in modern times in which the fortune of the day has been wholly decided by some sudden and unexpected act of an individual. In the reign of Louis XIV. a private soldier threw his hat into the midst of the enemy, during a hard fought and doubtful battle, expressing thereby that fresh succors were arrived to strengthen the French army. This circumstance, so apparently trifling, produced the desired effect. It threw the enemy into confusion, gave the French fresh spirits, and

finally determined the victory in their favor. We read of various instances in which signals have been used to express the personal danger of a king or general, who was fighting at the head of a select body of men. The knowledge of the critical position in which their leader stood, excited fresh courage in the rest of the troops, and drove them to acts of the greatest intrepidity. In the course of the late war some examples of the same sort might be adduced, both on the side of Austria and on that of France. The action on the bridge of Lodi, the passage of the Tegliamento, &c., would illustrate any observations we could make upon the subject.

Nor are the advantages which arise from the use of signals confined to these particular cases. Various circumstances grow out of the desultory nature of military operations to render flags of communication indispensably necessary. The vast scope which is given to modern tactics makes it impossible that the human eye or voice should take in all the critical manœuvres or evolutions that occur when an extended line is actually engaged. The right wing may be giving way, while the left is gaining ground, and the centre might be in danger, while the two flanks were rapidly advancing with apparent security against the enemy; as was the case in the battle of Marengo. Under these circumstances a general, by means of communicating signals, would be enabled to provide for every contingency without losing time by sending his orders verbally. Although signal flags, in modern engagements, have been generally laid aside, their use has been acknowledged in the adoption of warlike instruments, which, by the variety of their sounds, convey the necessary directions to an engaging army.

The ancients had signals which they called mute signals (signaux muets). These consisted in certain actions or signs that were made by a general; such as waving the hand, brandishing a stick or sword, or by exhibiting to view any part of his dress, accoutrements, &c. Instances of the same kind have occurred among the moderns. Under this denomination may likewise be classed the different signals made for the movement, marching, and manœuvring of troops, in and out of quarters. When troops are scattered, or separate from one another, it is usual to communicate by means of fires lighted upon eminences during the night, and by smoke during the day.

In former times large pieces of wood were hung above the towers of cities or castles, which, by being drawn up or lowered, gave intelligence of what passed. This method has been succeeded by the invention of telegraphs, which answer every purpose of communication, when they can be established through any extent of country. Besides those signals there are others which may be called vocal and demi-vocal. The vocal signals are those of the human voice, which consist in the necessary precautions that are adopted to prevent a guard or post from being surprised, to enounce words of command in action, &c. Of the first description are paroles and countersigns, which are exchanged between those to whom they are entrusted, and which are frequently altered, during the day and night, to prevent the enemy from receiving any information by means

of spies. The demi-vocal signals are conveyed by military instruments; the different soundings of which indicate, instantaneously, whether an army is to halt or to advance, whether troops are to continue in the pursuit of an enemy, or to retreat.

The demi-vocal signals, directed to be observed in the British service, as far as regards the manœuvring of corps, &c., consist of signals for the government of light infantry, and of cavalry regiments, squadrons, or troops: the latter are properly called soundings. Light infantry signals are to give notice—to advance; to retreat; to halt; to cease firing; to assemble; to call in all parties. In the regulations, printed by authority, it is observed that these signals are to be always considered as fixed and determined ones, and are never to be changed. The bugle horn of each company is to make himself perfect master of them. All signals are to be repeated; and all those signals which are made from the line or column are to convey the intention of the commanding officer of the line to the officer commanding the light infantry, who will communicate them to the several companies or detachments either by word or signal.

**SIGNAL-FLAG**, in ancient military history, was a gilded shield hung out of the admiral's galley; it was sometimes a red garment or banner. During the elevation of this signal the fight continued, and by its depression, or inclination towards the right or left, the rest of the ships were directed how to attack their enemies, or retreat from them.

**SIGNAL-STAFF**. In matters of military parade it is usual to fix a red flag, somewhat larger than a camp color, to point out the spot where the general, or officer commanding, takes his station in front of a line. This is called the signal-staff.

**SIG'NATURE, n. s.** { Fr. *signature*; Lat. *signatura*, *signo*. A sign or mark impressed; stamp; a mark; proof; signaturist, one who holds the old doctrine of signatures.

All bodies work by the communication of their nature, or by the impression and signatures of their motions: the diffusion of species visible seemeth to participate more of the former, and the species audible of the latter. *Bacon's Natural History.*

Seek out for plants and signatures,  
To quack of universal cures. *Hudibras.*

The most despicable pieces of decayed nature are curiously wrought with eminent signatures of divine wisdom. *Glanville.*

Signaturists seldom omit what the ancients delived, drawing unto inference received distinctions. *Browne.*

That natural and indelible signature of God, which human souls, in their first origin, are supposed to be stampt with, we have no need of in disputes against atheism. *Bentley.*

Vulgar parents cannot stamp their race  
With signatures of such majestick grace. *Pope's Odyssey.*

The brain being well furnished with various traces, signatures, and images, will have a rich treasure always ready to be offered to the soul. *Watts.*

Herbs are described by marks and signatures, so far as to distinguish them from one another.

*Baker on Learning*

Some plants bear a very evident signature of their nature and use. *More against Atheism.*

Some rely on certain marks and signatures of their election, and others on their belonging to some particular church or sect. *Rogers.*

**SIGNATURE**, in printing, is a letter put at the bottom of the first page, at least, in each sheet, as a direction to the binder in folding, gathering, and collating them. The signatures consist of the capital letters of the alphabet (omitting J, V, and W), which change in every sheet; if there be more sheets than letters in the alphabet, to the capital letter is added a small one of the same sort, as A a, B b; which are repeated as often as necessary. In large volumes it is easy to distinguish the number of alphabets, after the first three or four, by placing a figure before the signature, as 5 B, 6 B, &c.

**SIGNATURES** are used, in a particular sense, to denote those external marks by which physiognomists and dabblers in the occult sciences pretend to discover the nature and internal qualities of every thing on which they are found. According to Lavater, every corporeal object is characterised by signatures peculiar to itself. The doctrine of signatures, like alchymy and astrology, was very prevalent during the fifteenth and sixteenth centuries; and was considered as one of the occult sciences which conferred no small degree of honour on their respective professors. Some of these philosophers, as they styled themselves, maintained that plants, minerals, and animals, but particularly plants, had signatures impressed on them by the hand of nature, indicating to the adept the therapeutic uses to which they might be applied. Others, such as the mystic theosophists and chymists of that day, proceeded much farther in absurdity, maintaining that every substance in nature had either external signatures immediately discernible, or internal signatures, which, when brought into view by fire or menstrua, denoted its connexion with some sidereal or celestial archetype. Of the doctrine of signatures, as it relates merely to the therapeutic uses of plants and minerals, traces are to be found in the works of some of the greatest authors of antiquity; but the celestial signatures were discovered only by the moonlight of the monkish ages.

**SIGNATURE OF THE COURT OF ROME** is a supplication answered by the pope, by which he grants a favor, dispensation, or collation to a benefice, by putting the fiat at the bottom of it, in his own hand; or the concessum est written in his presence. This signature, at the bottom of the supplication, gives name to the whole instrument.

The signature contains the clauses, derogations, and dispensations, with which the pope grants the favor, or the benefice, with a commission for the execution of it, either in forma dignum, or in gracious form.

A signature of the pope's own hand, by which he answers, fiat ut petitur, is preferred to another answered by the prefect, in his presence, in these words, Concessum uti petitur in presencia D. N. papæ. Sometimes in signatures with the fiat the pope adds, proprio motu; which clause gives them still farther force.

There are three kinds of signatures: one in forma gratiosa, despatched on an attestation of the ordinary; another in forma dignum antiqua, despatched for canonicates; the third in forma dignum novissima, which is a kind of second signature, or executorial letter, granted where, upon the ordinary's failing to execute the first, within thirty days, the nearest other ordinary is enjoined to execute it.

SIG'NET, n. s. Fr. *signette*. A seal commonly used for the seal manual of a king, or sovereign authority.

Give thy *signet*, bracelets, and staff.

*Genesis xxxviii. 18.*

He delivered him his private *signet*. *Knolles.*  
I've been bold

To them to use your *signet* and your name.

*Shakspeare. Timon.*

Here is the hand and seal of the duke: you know the character, I doubt not, and the *signet*.

*Id. Measure for Measure.*

Proof of my life my royal *signet* made. *Dryden.*  
The impression of a *signet* ring.

*Ayliffe's Parergon.*

The *SIGNET* is one of the king's seals, made use of in sealing his private letters, and all grants that pass by bill signed under his majesty's hand: it is always in the custody of the secretaries of state.

SIGNET, in Scottish law. See LAW.

SIGNIFICAVIT, a writ issuing out of the chancery, upon certificate given by the ordinary of a man's standing excommunicate by the space of forty days, for the laying him up in prison till he submit himself to the authority of the church: and it is so called because significavit is the emphatical word in the writ. Reg. Orig. There is also another writ of this name in the register, directed to the justices of the bench, commanding them to stay any suit depending between such and such parties, by reason of an excommunication alleged against the plaintiff, &c.—Reg. Orig. 7. And in Fitzherbert we find writs of significavit in other cases; as significavit pro corporis, deliberatione, &c.—F. N. B. 62, 66. The common writ of significavit is the same with the writ excommunicato capiendo.

SIGNIFY, v. a. & v. n. } Fr. *signifier*; Lat. SIGNIF'ICANCE, n. s. } signif. To de- SIGNIF'ICANCY, } clare by a sign or SIGNIF'ICANT, adj. } token; import; SIGNIF'ICANTLY, adv. } make known: to express a meaning with force or emphasis: significance or significancy is power of signifying; meaning; weighty or important meaning; energy; consequence: the adjective and adverb corresponding.

He sent and *signified* it by his angel unto John. *Revelation i. 1.*

Whereas it may be objected, that to add to religious duties such rites and ceremonies as are significant, is to institute new sacraments. *Hooker.*

Since you are tongue-tied, and so loth to speak, In dumb *significants* proclaim your thoughts.

*Shakspeare. Henry VI.*

Stephano, *signify*

*Shakspeare.*

Within the house your mistress is at hand. *Shakspeare.*

Life's but a walking shadow; a poor player, That struts and frets his hour upon the stage,

And then is heard no more! It is a tale, Told by an ideot, full of sound and fury, Signifying nothing! *Id. Macbeth.*

It was well said of Plotinus, that the stars were significant, but not efficient. *Raleigh.*

Neither in the degrees of kindred they were destitute of significative words; for whom we call grandfather, they called ealdafader; whom we call great-grandfather, they called thirdafader.

*Camden's Remains.*

If the words be but comely and signifying, and the sense gentle, there is juice; but where that wanteth, the language is thin. *Ben Jonson.*

The holy symbols or signs are not barely significative, but what by divine institution they represent and testify unto our souls is truly and certainly delivered unto us. *Brewwood.*

Here is a double significatory of the spirit, a word and a sign. *Taylor.*

Though he that sins frequently, and repents frequently, gives reason to believe his repentances before God signify nothing, yet that is nothing to us. *Id.*

He hath one way more, which, although it signify little to men of sober reason, yet unhappily hits the suspicious humour of men, that governors have a design to impose. *Tillotson.*

Speaking is a sensible expression of the notions of the mind, by discriminations of utterance of voice, used as signs, having by consent several determinate significancies. *Holder.*

Common life is full of this kind of significant expressions, by knocking, beckoning, frowning, and pointing; and dumb persons are sagacious in the use of them. *Id. on Speech.*

Brute animals make divers motions to have several significations, to call, warn, cherish, and threaten. *Holder.*

If he declares he intends it for the honour of another, he takes away by his words the significance of his action. *Stillingfleet.*

The clearness of conception and expression, the boldness maintained to majesty, the significancy and sound of words, not strained into bombast, must escape our transient view upon the theatre. *Dryden.*

The maid from that ill omen turned her eyes, Nor knew what *signified* the boding sign, But found the powers displeased. *Id.*

What signifies the splendour of courts, considering the slavish attendances that go along with it. *L'Estrange.*

If the first of these fail, the power of Adam, were it never so great, will signify nothing to the present societies in the world. *Locke.*

By scripture, antiquity, and all ecclesiastical writers, it is constantly appropriated to Saturday, the day of the Jews' Sabbath, and but of late years used to signify the Lord's day. *Nelson.*

Those parts of nature, into which the chaos was divided, they signified by dark and obscure names; as the night, Tartarus, and Oceanus. *Burnet's Theory of the Earth.*

Christianity is known in scripture by no name so significantly as by the simplicity of the gospel. *South.*

A lye is properly a species of injustice, and a violation of the right of that person to whom the false speech is directed; for all speaking, or *signification* of one's mind, implies an act or address of one man to another. *Id.*

How fatal would such a distinction have proved in former reigns, when many a circumstance of less significancy has been construed into an overt act of high treason. *Addison.*

The Romans joined both devices, to make the emblem the more *significant*; as, indeed, they could not too much extol the learning and military virtues of this emperor. *Id.*

As far as this duty will admit of privacy, our Saviour hath enjoined it in terms of particular *significancy* and force. *Atterbury.*

I have been admiring the wonderful *significancy* of that word persecution, and what various interpretations it hath acquired. *Swift.*

What signifies the people's consent in making and repealing laws, if the person who administers hath no tie? *Id.*

The government should signify to the protestants of Ireland that want of silver is not to be remedied.

*Id.*

**SIGNINUM OPUS**, in archaiology, is a name given by Vitruvius (book viii. chap. 7), to a particular kind of work made use of in the construction of wells and cisterns. The following is the plan pursued:—They mixed five parts of pure sand and two of lime; and, having stirred these well together, added pieces of soft sandy stone, about a pound weight each. This mass served to cover the walls or ground work; and, for the purpose of additional solidity, they beat it with masses of wood pointed with iron. According to Pliny, the signum opus was constructed of pounded tiles and lime.

**SIGNORERY**, n. s. Ital. *scignoria*. Lordship; dominion; seniority.

If ancient sorrow be most reverent,  
Give mine the benefit of *signiory*,

And let my griefs frown on the upper hand.

*Shakspeare. Richard III.*

At that time

Through all the *signories* it was the first,  
And Prospero the prime duke. *Id. Tempest.*

The earls, their titles, and their *signories*,  
They must restore again. *Daniel's Civil War.*

My brave progenitors, by valour, zeal,  
Gained those high honours, princely *signories*,  
And proud prerogatives. *West.*

**SIGNORELLI** (Luke), an eminent Italian painter, born at Florence in 1439. He excelled chiefly in naked figures; and painted much for Sextus IV. He died in 1521.

**SIGONIUS** (Charles), a learned Italian, born of an ancient family in Modena in 1525. He taught Greek at Venice, Padua, and Bologna; had some disputes with Robertellus and Gruchius on Roman antiquities, in which he was well versed. He wrote a vast number of books; the chief are, 1. *De Republica Hebraeorum*. 2. *De Republica Atheniensium*. 3. *Historia de Occidentali Imperio*. 4. *De Regno Italiae*. He died in 1581, aged sixty.

**SIGUENZA**, the ancient Segontium, a city of Spain in Old Castile, and province of Guadalaxara, stands on an eminence near the source of the Henares. It is a bishop's see, and was, until 1807, the seat of a university founded by cardinal Ximenes: at present it contains about 5000 inhabitants, three churches, two hospitals, a castle and arsenal. Here Pompey fought a celebrated battle with Sertorius, and the Goths were afterwards defeated in the neighbourhood by the troops of the empire. It is seventy-five miles east of Madrid. In the neighbourhood are salt springs.

**SIGUNÆ**, *Steynt*, or *Sigynnae*, an ancient

nation of European Scythia, who inhabited the territory beyond the Danube.—Herodot. v. c. 9.

**SIHON**, a king of the Amorites, on the east banks of the Jordan. About A. M. 2540, he invaded the kingdom of Moab, and seized a considerable part of it. About A. M. 2552, having refused a passage to the Israelites through his territories, Moses attacked him, subdued and depopulated his country, and gave it to the Reubenites. Numb. xxi. 21—31. Deut. n. 26—34.

**SIHON**, in modern geography, a large river of Asia, called also Amu and Gihon. It rises in Bukharia, and runs into Lake Aral. It formerly ran into the Caspian Sea, but the Tartars changed its course.

**SIKHS, SEIKS, or SEEKS.** Under the word SEEKS we have given Mr. Watkins's account of this formidable sect of Hindoo religionists. Sir J. Malcolm and other modern writers supply many additional facts of their political history. During the interval that elapsed between the defeat and death of Banda, and the invasion of India by Nadir Shah, a period of nearly thirty years, we hear nothing of the Sikhs; but on that event they are said to have fallen upon the inhabitants of the Panjab, who sought shelter in the hills, and to have plundered them of that property which they were endeavouring to secure from the rapacity of the Persian invader. Enriched with these spoils, says the author whose account of them we now cite, the Sikhs left the hills, and built the fort of Dalewal, on the Ravi, whence they made predatory incursions, and are stated to have added both to their wealth and reputation by harassing and plundering the rear of Nadir Shah's army, which, when it returned to Persia, was encumbered with spoil, and marched, from a contempt of its enemies, with a disregard to all order.

The weak state of Hindostan, and the confusion into which the provinces of Lahore and Cabul were thrown, by the death of Nadir, were events of too favorable a nature to the Sikhs to be neglected; they became daily more bold, from their numbers being greatly increased by the union of all those who had taken shelter in the mountains; the re-admission into the sect of those who, to save their lives, had abjured for a period their usages; and the conversion of a number of proselytes, who hastened to join a standard under which robbery was made sacred, and to plunder was to be pious. Aided with these recruits, the Sikhs extended their irruptions over most of the provinces of the Panjab; and though it was some time before they repossessed themselves of Amritsar, they began, immediately after they quitted their fastnesses, to flock to that holy city at the periods of their sacred feasts. Some performed this pilgrimage in secret and in disguise; but in general, according to a contemporary Mahometan author, the Sikh horsemen were seen riding at full gallop towards 'their favorite shrine of devotion. They were often slain in making this attempt, and sometimes taken prisoners; but they used on such occasions to seek, instead of avoiding, the crown of martyrdom:' and the same authority states 'that an instance was never known of

a Sikh, taken in his way to Amritsar, consenting to abjure his faith.'

A. D. 1746 the Sikhs made themselves masters of a considerable part of the Dooab of Ravi and Jalendra, and the country between the rivers Ravi and Beyah, and that river and the Setlej, and extended their incursions to the neighbouring countries. But though they were severely and repeatedly checked by Mir Manu, the governor of Lahore, yet, after his death, they availed themselves of all the advantages which the local distractions of a falling empire afforded them of extending and establishing their power. Their bands, under their most active leaders, plundered in every direction, and were successful in obtaining possession of several countries, from which they have never since been expelled; and their success, at this period, was promoted, instead of being checked, by the appointment of their old friend, Adina Beg Khan, to Lahore; as that brave chief, anxious to defend his own government against the Afghans, immediately entered into a confederacy with the Sikhs, whom he encouraged to plunder the territories of Ahmed Shah Abdali. The Afghan monarch, resenting this, determined upon invading India, when Adina Beg, unable to oppose him, fled: and the Sikhs could only venture to plunder the baggage, and cut off the stragglers of the Afghan army, by which they so irritated Ahmed Shah, that he threatened them with punishment on his return; and, when he marched to Cabul, he left his son Taimur Khan, and his vizier Jehan Khan, at Lahore, with orders to take vengeance on the Sikhs for all the excesses which they had committed. The first expedition of Taimur Khan was against their capital, Amritsar, which he destroyed, filling up their sacred tank, and polluting all their places of worship; by which action he provoked the whole race to such a degree that they all assembled at Lahore, and not only attempted to cut off the communication between the fort and country, but collected and divided the revenues of the towns and villages around it. Taimur Khan, enraged at this presumption, made several attacks upon them, but was constantly defeated; and, being at last reduced to the necessity of evacuating Lahore, and retreating to Cabul, the Sikhs, under one of their celebrated leaders, called Jasa Singh Calal, immediately took possession of the vacant soubah of Lahore, and ordered rupees to be coined, with an impression to the following import: 'Coined by the grace of Khalsah Ji, in the country of Ahmed, conquered by Jasa Singh Calal.' Although they were afterwards expelled, together with the Afghans, from Lahore, yet after the death of Adina Beg Khan, the governor of this province, they eagerly seized the opportunity that was thus afforded them of making themselves again masters of Lahore. Their success was, however soon checked by Ahmed Shah Abdali, who, irritated by their unsubdued turbulence and obstinate intrepidity, made every effort (after he had gained the victory of Panipat'h, which established his supremacy at Delhi) to destroy their power; and, with this view, he entered the Panjab early in 1762, and over-ran the whole of that country with a numerous army, defeating

and dispersing the Sikhs in every direction. That sect, unable to make any stand against the army of the Abdali, pursued their old plan of retreating near the mountains; and collected a large force in the northern districts of Sirhind, a distance of above 100 miles from Lahore, where the army of Ahmed Shah was encamped. Here they conceived themselves to be in perfect safety; but that prince made one of those rapid movements for which he was so celebrated, and, reaching the Sikh army on the second day, completely surprised and defeated it with great slaughter. In this action, which was fought in February 1762, the Sikhs are said to have lost upwards of 20,000 men; and the remainder fled into the hills, abandoning all the lower countries to the Afghans, who committed every ravage that a barbarous and savage enemy could devise. Amritsar was razed to the ground, and the sacred reservoir again choked with its ruins. Pyramids were erected, and covered with the heads of slaughtered Sikhs; and it is mentioned that Ahmed Shah caused the walls of those mosques which the Sikhs had polluted to be washed with their blood, that the contamination might be removed, and the insult offered to the religion of Mahomet expiated. This species of retaliation appears to have animated instead of depressed the courage of the Sikhs, who, though they could not venture to meet Ahmed Shah's army in action, harassed it with an incessant predatory warfare; and, when that sovereign was obliged, by the commotions of Afghanistan, to return to Cabul, they attacked and defeated the general he had left in Lahore, and made themselves masters of that city, in which they levelled with the ground those mosques which the Afghans had, a few months before, purified with the blood of their brethren.

A. D. 1763, when Ahmed Shah, after retaking Lahore, was obliged, in the ensuing year, to return to his own country, the Sikhs again expelled his garrison, and made themselves masters of the Panjab; and, from that period until his death, a constant war was maintained, in which the enterprise and courage of the Afghans gradually gave way before the astonishing activity, and invincible perseverance, of their enemies; who, if unable to stand a general action, retreated to impenetrable mountains, and, the moment they saw an advantage, rushed again into the plains with renewed vigor and recruited numbers. Several Sikh authors, treating of the events of this period, mention a great action having been fought by their countrymen, near Amritsar, against the whole Afghan army, commanded by Ahmed Shah in person; but they differ with regard to the date of this battle, some fixing it in 1762, and others later. They pretend that the Sikhs, inspired by the sacredness of the ground on which this action was fought, contended for victory against superior numbers with the most desperate fury, and that the battle terminated in both parties quitting the field, without either being able to claim the least advantage. The historians of Ahmed Shah are, however, silent regarding this action, which indeed, from all the events of his long contests with the Sikhs, appears unlikely to have occurred.

When oppressed, the Sikhs became as formid-

able for their union, as for their determined courage and unconquerable spirit of resistance : but a state of persecution and distress was most favorable for a constitution like theirs, which required constant and great sacrifices of personal advantage to the public good ; and such sacrifices can only be expected from men who act under the influence of that enthusiasm which the servor of a new religion, or a struggle for independence, only imparts, and which are always most readily made when it becomes obvious to all that a complete union in the general cause is the only hope of individual safety.

The Sikhs may be considered as forming the most western nation of Hindostan ; for the king of Candahar possesses but an inconsiderable extent of territory on the east of the Indus. Since the complete downfall of the Mogul empire, they have acquired very extensive domains. But major Rennell observes that their power ought not to be estimated in the exact proportion to the extent of their population, since they do not form one entire state ; but a number of small ones, independent of each other in their internal government, and only connected by a federal union. They have extended their territories on the south-east, that is, into the province of Delhi, very rapidly of late years ; and perhaps the zemindars of that country may have found it convenient to place themselves under the protection of the Sikhs, in order to avoid the more oppressive government of their former masters. It is certain that the eastern boundary of the Sikh's dominions has been advanced to the banks of the Jummah River, above Delhi, and to the neighbourhood of that city ; for the adjoining territory of Schaurunpour is subject to their depredations, if not actually tributary to them ; and they make incursions even to the side of the Ganges. On the south they are bounded by the northern extreme of the sandy desert of Registan, and on the south-west their boundary meets that of Sind, or Tatta, at the city of Behker or Bhekr, on the Indus. On the west the Indus is their general boundary, as high up as the city of Attock ; near to which begin the territories of the king of Candahar ; and their northern boundary is the chain of mountains that lies towards Thibet and Cashmere. As this is the case, they will be found to possess the whole soubah or province of Lahore, the principal part of Moultan, and the western part of Delhi ; the dimensions of which tract are about 400 British miles from north-west to south-east, and from 150 to 200 broad, in general ; although in the part between Attock and Bekhr (that is, along the Indus) the extent cannot be less than 320. Their capital city is Lahore.

According to Sir J. Malcolm, the country now possessed by the Sikhs, which reaches from N. lat.  $28^{\circ} 40'$  to beyond N. lat.  $32^{\circ}$ , and includes all the Panjab, a small part of Moultan, and most of that tract of country which lies between the Jummah and the Setlej, is bounded to the northward and westward by the territories of the king of Cabul ; to the eastward by the possessions of the mountaineer rajas of Jammu, Nadon, and Srinagar ; and to the southward by the territories of the English government, and

the sandy deserts of Jasalmer and Hansya Hisar. A general estimate of the value of the country possessed by the Sikhs may be formed, when it is stated that it contains, besides other countries, the whole of the province of Lahore ; which, according to Mr. Bernier, produced, in the reign of Aurungzebe, 246 lacs and 95,000 rupees ; or £2,469,560 sterling. The Sikhs who inhabit the country between the Setlej and the Jummah are called Malwa Sinh, and were almost all converted from the Hindoo tribes of Jats and Gujjars. The country of the Malwa Sinh is in some parts fruitful ; but those districts which border on Hansya and Carnal are very barren ; being covered with low wood, and in many places almost destitute of water. Its former capital was Sirhind, but it is now a complete ruin. Patiala is now the largest and most flourishing town of this province, and next to it is Thanesur, which is still held in high veneration by the Hindoos, who have also a high reverence for the river Seraweti, which flows through this province. The country of Jalendra Dooab, which reaches from the mountains to the junction of the Setlej and the Beah, is the most fruitful of all the possessions of the Sikhs, and is perhaps excelled, in climate and vegetation, by no province in India. The soil is light, but very productive ; the country, which is open and level, abounds in every kind of grain. The towns of Jalendra and Sultanpour are the principal in the Dooab. The country between the Beyah and Ravi Rivers is called Bari Dooab, or Manjha ; and the Sikhs inhabiting it are called Manjha Sinh. The cities of Lahore and Amritsar are both in this province, and consequently it becomes the great centre of the power of this nation. The country of Bari is said to be less fertile, particularly towards the mountains, than Jalendra, but, lying on the same level, its climate and soil must be nearly the same. The inhabitants of the country been Ravi and Chanhah are called D'harpi Siuh, from D'harpi, the name of the country : the Dhanigheb Siuh are beyond the Chanhah, but within the Jehalam river. The Sind Siuh is the term by which the inhabitants of the districts under the Sikhs bordering on the Sind are known ; and Nakai Siuh is the name given to the Sikhs who reside in Moultan.

Their government may be termed a theocracy. Although they obey a temporal chief, that chief preserves his power and authority by professing himself the servant of the khalsa, or government, which can only be said to act, in times of great public emergency, through the means of a national council, of which every chief is a member, and which is supposed to deliberate and resolve under the immediate inspiration and impulse of an invisible being ; who, as they believe, always watches over the interests of the commonwealth. It is natural, however, to imagine that the power of this assembly should decline ; and, from colonel Malcolm's account, we may infer that it is nearly destroyed. The last Guru-mata was called in 1803, when the British army pursued Holkar into the Panjab. The government is mild ; but in their mode of making war the Sikhs are unquestionably savage and cruel. Among the Sikhs there is a class of devotees, called Acalis, or

immortals, who, under the double character of fanatic priests and desperate soldiers, have usurped the sole direction of all religious affairs at Amritsar ; and who, of course, are leading men in a national council held at that sacred place, and which deliberates under all the influence of religious enthusiasm. This order of Sikhs was first founded by Guru Govind, and are distinguished by their dress, as well as by their having almost the sole direction of the religious ceremonies at Amritsar. They have a place on the bank of the sacred reservoir of Amritsar, where they generally resort, but are individually possessed of property, though they affect poverty, and subsist on charity. The principal chiefs of the Sikhs are all descended from Hindoo tribes. The lower order of Sikhs, compared with the wretched Mahometans who are doomed to oppression and hard labor, are happy ; they are protected from the tyranny and violence of the chiefs under whom they live by the precepts of their common religion, and by the condition of their country, which enables them to abandon, whenever they choose, a leader whom they dislike. The civil officers, to whom the chiefs entrust their accounts, and the management of their property and revenue concerns, as well as the conduct of their negociations, were in general Sikhs of the Khalasa cast, who, being followers of Nanac, and not of Guru Govind, are not devoted to arms, but educated for peaceful occupations, in which they often become very expert and intelligent. In the collection of the revenue of the Panjab, it is said to be a general rule that the chiefs to whom the territories belong should receive the half of the produce, grain paying in kind, but sugar, melons, &c., in cash, and the farmer the other : but the chief never levies the whole of his share ; and in no country, perhaps, is the ryat, or cultivator, treated with more indulgence. Commerce is rather restrained than encouraged by the heavy duties and the distracted state of the country. However, a great part of the shawl trade now flows through the cities of Lahore, Amritsar, and Patiala, to Hindostan.

The administration of justice among the Sikhs is in a very rude and imperfect state. Their law is unwritten. Nothing is consigned to any express form of words. There is no definition of any thing. The custom of the country, the custom of the court (that is to say, as far as the judge is pleased to be governed by those customs), and the will of the judge,—are the circumstances which guide the decision. Among the Hindoos some of the sacred books, among the Mahometans the Koran, are used as the books of law. Among the Sikhs there is no such reference to any sacred books ; and their situation is, in all probability, so much the better : for the Koran or Hindoo books afford scarcely any rules or principles of law, which are not so vague as to speak any language which the interpreter chooses to give them ; and while their authority is sufficient to supersede that of the natural dictates of justice and equity, which are the only guides of the Sikh judges, the Hindoo or Mahometan has only to find or to feign a principle of his book, which may enable him to decide as he pleases. trifling

disputes, in civil matters, are settled by the heads of the village, by arbitration, or by the chiefs. The court of arbitration is called panchayat, or a court of five, the general number of arbitrators chosen to adjust differences and disputes. It is usual to assemble a panchayat, or a court of arbitration, in every part of India under a native government ; and, as they are always chosen from men of the best reputation in the place where they meet, this court has a high character for justice. The decision obtained by either of these modes is final. If a theft occurs, the property is recovered, and the party punished, not with death, by the person from whom it was stolen, or by the inhabitants of the village, or his chief. Murder is sometimes punished by the chief ; but more generally by the relatives of the deceased, who, in such cases, rigorously retaliate on the murderer, and sometimes on all who endeavour to protect him.

The Sikhs have, in general, the Hindoo cast of countenance, somewhat altered by their long beards, and are to the full as active as the Mahrattas, and much more robust, from their living fuller, and enjoying a better and colder climate. Their courage is equal at all times to that of any natives of India ; and, when wrought upon by prejudice or religion, is quite desperate. They are all horsemen, and have no infantry in their own country, except for the defence of their forts and villages, though they generally serve as infantry in foreign armies. They are bold, and rather rough in their address, which appears more to a stranger from their invariably speaking in a loud tone of voice : but this is quite a habit, and is alike used by them to express the sentiments of regard, and hatred. The Sikhs have been reputed deceitful and cruel, but Sir John Malcolm knew no grounds upon which they could be considered more so than the other tribes of India : they seemed to him, from all the intercourse he had with them, to be more open and sincere than the Mahrattas, and less rude and savage than the Afghans. They have, indeed, become, from national success, too proud of their own strength, and too irritable in their tempers, to have patience for the wiles of the former : and they retain, in spite of their change of manners and religion, too much of the original character of their Hindoo ancestors (for the great majority are of the Hindoo race) to have the constitutional ferocity of the latter. The Sikh soldier is, generally speaking, brave, active, and cheerful ; without polish, but destitute neither of sincerity nor attachment ; and, if he often appears wanting in humanity, it is not so much to be attributed to his national character, as to the habits of a life, which, from the condition of the society in which he is born, is generally passed in scenes of violence and rapine. The Sikh merchant, or cultivator of the soil, if he is a Singh, differs little in character from the soldier, except that his occupation renders him less boisterous. He also wears arms, and is, from education, prompt to use them, whenever his individual interest, or that of the community in which he lives, requires him to do so. The general occupation of the Khalasa Sikhs has been before mentioned. Their character differs widely from that of the

Sinhs. Full of intrigue, pliant, versatile, and insinuating, they have all the art of the lower classes of Hindoos, who are usually employed in transacting business; from whom, indeed, as they have no distinction of dress, it is very difficult to distinguish them.

The general character of the religious tribes of Acalis, Shahid, and Nirmala, is formed from their habits of life. The Acalis are insolent, ignorant, and daring: presuming upon those rights which their numbers and fanatic courage have established, their deportment is hardly tolerant to the other Sikhs, and insufferable to strangers, for whom they entertain a contempt which they take little pains to conceal. The Shahid and the Nirmala, particularly the latter, have more knowledge and more urbanity; they are almost all men of quiet peaceable habits; and many of them are said to possess learning. There is another tribe among the Sikhs, called the Nanac Pautra, or descendants of Nanac, who have the character of being a mild, inoffensive race; and, though they do not acknowledge the institutions of Guru Govind, they are greatly revered by his followers, who hold it sacrilege to injure the race of their founder; and, under the advantage which this general veneration affords them, the Nanac Pautra pursue their occupations; which, if they are not mendicants, is generally that of travelling merchants. They do not carry arms; and profess, agreeably to the doctrine of Nanac, to be at peace with all mankind.

The Sikh converts continue, after they have quitted their original religion, all those civil usages and customs of the tribes to which they belonged, that they can practise, without infringing of the tenets of Nanac, or the institutions of Guru Govind. They are most particular with regard to their intermarriages; and on this point Sikhs descended from Hindoos almost invariably conform to Hindoo customs, every tribe intermarrying within itself. The Hindoo usage regarding diet is also held equally sacred; no Sikh descended from a Hindoo family ever violating it, except upon particular occasions, such as a Guru-mata, when they are obliged, by their tenets and institutions, to eat promiscuously. The strict observance of these usages has enabled many of the Sikhs, particularly of the Jat and Gujar tribes, which include almost all those settled to the south of the Setlej, to preserve an intimate intercourse with their original tribes; who, considering the Sikhs not as having lost caste, but as Hindoos that have joined a political association, which obliges them to conform to general rules established for its preservation, neither refuse to intermarry, nor to eat with them.

The higher caste of Hindoos, such as Brahmins and Cshatriyas, who have become Sikhs, continue to intermarry with converts of their own tribes, but not with Hindoos of the caste they have abandoned, as they are polluted by eating animal food, all kinds of which are lawful to Sikhs, except the cow, which it is held sacrilege to slay. The Mahometans who become Sikhs intermarry with each other, but are allowed to preserve none of their usages, being obliged to eat hog's-flesh, and abstain from circumcision. The Sikhs are forbidden the use of tobacco, but allowed to

indulge in spirituous liquors, which they almost all drink to excess; and it is rare to see a Sinh soldier, after sun-set, quite sober. Their drink is an ardent spirit, made in the Panjab; but they have no objection to either the wine or spirits of Europe, when they can obtain them. They also take b'hang (*cannabis sativa*), another inebriating drug.

The conduct of the Sikhs to their women differs in no material respect from that of the tribes of Hindoos or Mahometans: their moral character, with regard to women, and indeed in most other points, may, from the freedom of their habits, generally be considered as much more lax than that of their ancestors, who lived under the restraint of severe restrictions, and whose fear of excommunication from their caste, at least obliged them to cover their sins with the veil of decency. This the emancipated Sikhs despise; and there is hardly an infamy with which this debauched and dissolute race are not accused, and with justice, as Sir John Malcolm believed, of committing in the most open manner.

The Sikhs are almost all horsemen, and they take great delight in riding. Their horses were formerly famous for their strength, temper, and activity; but they are now no better mounted than the Mahrattas. They use swords and spears, and most of them now carry match-locks, though some still use the bow and arrow, a species of arms for excellence in the use of which their forefathers were celebrated, and which their descendants appear to abandon with great reluctance.

The education of the Sikhs renders them hardy, and capable of great fatigue; and the condition of the society in which they live affords constant exercise to that restless spirit of activity and enterprise which their religion has generated. Such a race cannot be epicures; they appear, indeed, generally to despise luxury of diet, and pride themselves in their coarse fare. Their dress is also plain, not unlike the Hindoos, equally light, and divested of ornament. Some of the chiefs wear gold bangles, but this is rare; and the general characteristic of their dress and mode of living is simplicity. The principal leaders among them affect to be familiar and easy of intercourse with their inferiors, and to despise the pomp and state of the Mahometan chiefs; but their pride often counteracts this disposition; and they appear to have, in proportion to their rank and consequence, more state, and to maintain equal, if not more, reserve and dignity with their followers, than is usual with the Mahrattah chiefs.

They boast that they can raise more than 100,000 horse; and, if it were possible to assemble every Sikh horseman, this statement might not be an exaggeration; but there is, perhaps, no chief among them, except Ranjit Singh of Lahore, that could bring an effective body of 4000 men into the field; and the force of Ranjit Singh did not in 1805 amount to 8000, and part of that was under chiefs who had been subdued from a state of independence, and whose turbulent minds ill-brooked a usurpation which they deemed subversive of the constitution of their commonwealth. His army is now more numerous than it was, but it is composed of

materials that have no natural cohesion, and the first serious check which it meets will probably cause its dissolution.

The religion of the Sikhs seems, says Sir John Malcolm, to have been a sort of pure deism, grounded on most sublime general truths, blended with the belief of all the absurdities of the Hindoo mythology, and the fables of Mahometanism; for Nanac professed to conciliate Hindoos and Mahometans to the belief of his doctrine, by persuading them to reject those parts of their respective belief and usages, which, he contended, were unworthy of that God whom they both adored. He endeavoured to impress both Hindoos and Mahometans with a love of toleration, and an abhorrence of war; and his life was as peaceable as his doctrine. But is it not evident, says an anonymous writer, that so far as absurdities are mixed with a religious creed, so far the purity of its deism is excluded? But to proceed; Guru Govind gave a new character to the religion of his followers, by establishing institutions and usages, which not only separated them from other Hindoos, but which, by a complete abolition of all distinctions of castes, destroyed a system of civil polity, which, from being interwoven with the religion of a weak and bigoted race, fixed the rule of its priests upon a basis that had withstood the shock of ages.

SILARUS, a river of Italy, in Picenum, rising in the Appennine mountains, and falling into the Tyrrhenic Sea. Its waters had a petrifying virtue. Strabo. v. Mela ii.

SILAS, or SYLVANTUS, the fellow-traveller with St. Paul, and one of the primitive teachers of Christianity in the apostolic age. He is styled a prophet in Acts xv. 32. Some writers conjecture that he and Carpus were the two disciples whom John the Baptist sent to Jesus. (Matt. xi. 2, 3.) Some make him the same with Tertius, who mentions himself as Paul's amanuensis in Rom. xvi. 21; but why he should have called himself Tertius in that epistle, while he is called Silas or Sylvanus in the Acts and other epistles, we know not. In the two epistles to the Thessalonians, his name is expressly joined with those of Paul and Timotheus in the incipient salutations. He was sent with Paul from Antioch to the synod at Jerusalem; and he and Judas were sent by the synod with Paul and Barnabas, with their decrees to the churches. He accompanied Paul to Lycaonia, Phrygia, Galatia, and Macedonia; and was his fellow prisoner at Philippi. Along with Timothy he instructed the disciples at Berea, and preached at Corinth. St. Peter also wrote his first epistle to the dispersed Jews by him (chap. v. 12). He died in Macedonia.

SILBURY HILL, the remains of a stupendous Roman barrow, near the village of Avebury, Selkely hundred, Wiltshire, seven miles from Marlborough; it rises 170 feet in perpendicular height, and its form is the frustum of a cone, its diameter at the top being 105 feet, and at the bottom 500.

SILCESTER, a parish in Holdshott hundred, and division of Basingstoke, Hants., on the border of Berkshire, seven miles north from Basingstoke, and forty-five from London; con-

taining but eighty-five houses, but is supposed to have been once a populous city, called by the Romans Segontiaci, by the Britons Caer-Segont, and by the Saxons Silcester, or the great city. Leland records the walls to have been two miles in compass, comprising eighty acres of ground. These are remaining at present, and are of nine unequal sides, formed of rows of stones and flints alternately, being about eighteen feet high and fifteen thick; the remains of the ditches are in some places twelve yards over, with the appearance of having had four principal gates. Many British coins have been dug up at different times. Without the walls on the north-east is a pond, which was the site of an amphitheatre. A military road called Lonbank and Grimsdike, pitched with flints, runs from the south gate to Winchester; and another, called the Portway, leads from the south-gate, by Andover, to Old Sarum.

SILENCE, *n.s.*, *interj.* Fr. *silence*; Lat. *silēntē*, *adj.* [*& v. a.*] *silentium*. Forbearance of speech; the state of holding peace; stillness; secrecy; oblivion: be still! to silence is, to oblige to hold peace; still; forbid to speak: the adjective and adverb corresponding.

O my God, I cry in the day time, and in the night season I am not silent. *Psalm xxii. 2.*

Unto me men gave ear, and waited and kept silence at my counsel. *Job xxix. 21.*

I suffer not a woman to teach, nor to usurp authority over the man, but to be in silence. *1 Timothy ii. 12.*

Sir, have pity; I'll be his surety.  
—Silence! one word more  
Shall make me chide thee, if not hate thee. *Shakespeare.*

We must suggest the people, that to 's power  
He would have made them mules, *silenced* their  
pleaders, and  
Disproportioned their freedoms. *Id.*

Silence that dreadful bell; it frights the isle  
From her propriety. *Id. Othello.*  
Deep night, dark night, the silent of the night,  
The time of the night when Troy was set on fire,  
The time when screech-owls cry, and ban-dogs howl. *Shakespeare.*

Second and instrumental causes, together with nature itself, without that operative faculty which God gave them, would become *silent*, *virtueless*, and *dead*. *Raleigh's History.*

This passed as *an oracle*, and *silenced* those that moved the question. *Bacon's Henry VII.*

Since in dark sorrow I my days did spend,  
I could not *silence* my complaints. *Denham.*  
This would *silence* all further opposition. *Clarendon.*

*Silent*, and in face  
Confounded, long they sat as stricken mute. *Milton.*  
Nameless in dark oblivion let them dwell;  
For strength from truth divided, and from just,  
Illaudable, nought merits but dispraise  
And ignominy; yet to glory aspires,  
Vain-glorious, and through infamy seeks fame;  
Therefore eternal *silence* be their doom. *Id.*

The sun to me is dark,  
And *silent* as the moon,  
When she deserts the night,  
Hid in her vacant interlunar cave. *Id.*  
This new created world, whereof in hell  
Fame is not *silent*. *Id.*

Thus could not the mouths of worthy martyrs be silenced, who, being exposed unto wolves, gave loud expressions of their faith, and were heard as high as heaven.

*Browne.*

Hail, happy groves! calm and secure retreat  
Of sacred silence, rest's eternal seat!

*Roscommon.*

These dying lovers, and their floating sons,  
Suspend the fight, and silence all our guns.

*Waller.*

You to a certain victory are led;  
Your men all armed stand silently within.

*Dryden.*

The difficulties remain still, till he can show who is meant by right heir, in all those cases where the present possessor hath no son: this he silently passes over.

*Locke.*

Had they duly considered the extent of infinite knowledge and power, these would have silenced their scruples, and they had adored the amazing mystery.

*Rogers.*

If it please him altogether to silence me, so that I shall not only speak with difficulty, but wholly be disabled to open my mouth to any articulate utterance; yet I hope he will give me grace, even in my thoughts, to praise him.

*Wake.*

Speech submissively withdraws.  
From rights of subjects, and the poor man's cause; Then pompous silence reigns, and stills the noisy laws.

*Pope.*

The thunderer spoke, nor durst the queen reply;  
A reverend horror silenced all the sky.

*Id. Iliad.*

Ulysses, adds he, was the most eloquent and most silent of men; he knew that a word spoken never wrought so much good as a word concealed.

*Broomé.*

SILENCE [Lat. *silentium*], in emblematical painting and sculpture, has been personified by Harpocrates, as a young man with his finger in his mouth. Silence, or rather secrecy, is also expressed by a figure lifting a seal to his lips. The allegory was furnished by Alexander the Great, who, observing Hephestion reading at the same time with himself a letter which he had received from his mother, drew from his finger the ring which he used as a signet, and placed it on the other's lip.

SILENE, catchfly, fly-bane, fly-wort, or viscous campion, in botany, a genus of plants belonging to the class of decandria, and order of trigynia; and in the natural system arranged under the twenty-second order, caryophyleæ. The calyx is ventricose; the petals are five in number, bifid and unguiculated, and crowned by a nectarium; the capsule is cylindrical, covered, and trilocular. There are twenty-six species, of which seven are natives of Britain and Ireland. 1. *S. acaulis*, moss campion. The radical leaves are spread on the ground like a tuft of moss; the stalks are about an inch long, and naked, bearing each a single purple flower. This species grows on mountains, and has been found in Wales and Scotland within half a mile from their top. It is in flower in July. 2. *S. amoena*, sea campion. The stem is two or three feet long, slender, procumbent, and branched alternately; the leaves are long and narrow; the flowers are white, and grow on the opposite foot-stalks, three on each, in unilateral bunches; the calyx is hairy and purplish, and has ten angles. It grows on the south coast, and flowers in June and July. 3. *S. anglica*, the small torn campion, or English catch-fly. The stem is weak, hairy, and above a foot high; the leaves are

oblong, and grow in pairs at the joints; the flowers are small, white, and entire; they stand on foot-stalks which issue from the axil of the leaves; they are erect, alternate, single, and lateral. It grows in corn-fields, and flowers in June and July. 4. *S. armeria*, broad-leaved catch fly. The stem is about eighteen inches, and erect, with a few branches; the leaves are smooth, sessile, and broad at the base; the flowers terminal, in fastigiate bundles, small and red. It may be seen on the banks of rivers, and is in flower in July and August. 5. *S. conoidea*, greater corn catchfly, or campion. The leaves are narrow and soft; the calyx is conical, with thirty striae; the flowers proceed from the diversifications of the stem; the petals are entire. It grows in corn-fields, and flowers in June. 6. *S. noctiflora*, the night flowering catchfly. The stem is about two feet high, and forked; the calyx has ten angles, is somewhat clammy, and oval, with longer teeth than the other species; the petals are of a reddish white. 7. *S. nutans*, Nottingham catchfly. The stem is about two feet high and firm; the radical leaves are broad, obtuse, and grow in a tuft; those on the stem are narrow and acute; the flowers are white, and grow in lateral panicles; the petals are bifid and curled; the calyx is long, bellying a little, with ten longitudinal striae. It grows in pastures, and flowers in June and July.

SILENI, an ancient nation of India, who dwelt on the banks of the Indus.

SILENI, in the mythology, the fawns and satyrs, so called from Silenus.

SILENUS, in mythology, the son of Pan, or Mercury, by Tetra, and one of the sylvan deities, born at Malea, in Lesbos. He became the nurse, preceptor, and constant attendant of Bacchus. He had a temple in Elis. He is generally represented as a jolly fat old man, riding on an ass, crowned and wreathed round with flowers, and often intoxicated, with a cup in his hand. In this situation he was once found by some Phrygian peasants, sleeping on the road, having lost his way (as many others have done), following Bacchus. They took him to king Midas, who entertained him hospitably for ten days, and then restored him to Bacchus, who rewarded Midas by giving him the power of turning every thing he touched into gold. See MIDAS. Those authors who celebrate Bacchus as the conqueror of India, say that Silenus was a great philosopher, and assisted Bacchus in his Indian expedition by his wise counsels. Paus. iii. c. 25; Philost. Ovid. Met. iv. &c.

SILENUS is also the name of two ancient historians, viz. 1. A Carthaginian, who wrote a history of Carthage in Greek. 2. An Italian, who wrote an account of Sicily.

SILESIA, an important province of Prussia, is situate between Poland on the east, and Bohemia on the west, extending from long.  $14^{\circ} 25'$  to  $18^{\circ} 12' E.$ , and from lat.  $49^{\circ} 40'$  to  $51^{\circ} 59' N.$  The county of Glatz, and a portion of Lusatia, are annexed to it. In form it is oblong, extending in length, from south-east to north-west, 210 miles, in breadth about 100, and contains an area computed at 15,000 square miles, with a population of more than 2,000,000. Silesia,

formerly divided into Upper and Lower, and subdivided into a number of smaller principalities or duchies, has these distinctions now abolished, and forms a military division along with Posen, is divided into the four governments of Breslau, Reichenbach, Liegnitz, and Oppeln. The chief towns are—

Population.	Population
Breslau, the capital . . . . .	Hirschberg . . . . .
63,000	Jauer . . . . .
Liegnitz . . . . .	Frankenstein . . . . .
10,000	Schniedeberg . . . . .
Glogau . . . . .	Oels . . . . .
9,500	Oppeln . . . . .
Neisse . . . . .	Leobschutz . . . . .
9,000	Reichenbach . . . . .
Schweidnitz . . . . .	Landshut . . . . .
8,000	
Langen-Bielau . . . . .	
6,800	
Glatz . . . . .	
6,700	

A long range of mountains, all included in the Sudetic chain, but bearing different names, such as the Riesengebirge, the Glatz mountains, Moravian mountains, &c., divides Silesia from Bohemia and Moravia. From Hungary it is separated by the Carpathians. The Sudetic range is steep, and full of narrow defiles, particularly on the north-west; they become broader as they stretch to the southward. So great an extent of high ground renders the climate on the whole cold; the whole south of Silesia being often covered with snow, while at Breslau, and farther north, the progress of spring is sensibly felt. The Oder is the next great natural feature of Silesia, and, flowing from south to north, traverses it nearly in the middle, passes Breslau, and receives all the lesser rivers flowing from east and west. To the east the country is called the Polish side: it is perfectly level, with a soil often sandy, marshy, and unproductive; while the western or German side, though hilly, is cultivated by a more improved race, and is superior both in mineral and vegetable products. It is in fact one of the best portions of the Prussian territory, containing mines of coal and iron, and, on a smaller scale, copper, vitriol, and cobalt mines. This is likewise a great manufacturing country, linen manufactures being as general here as in Normandy or the north of Ireland: the value annually made is estimated at £1,500,000 sterling, of which more than half is exported. Attention is consequently bestowed on the culture of flax, the quality of which is equal to that of any part of the world. The wool has also been improved since the latter part of the eighteenth century. Foxes and other beasts of game abound: and the lynx, as well as the beaver, is sometimes found in the mountains. The forests are of great importance to the local manufactures, affording abundant fuel.

It is also a received notion that the water on the Silesian side of the Sudetic range is better for bleaching than that on the Bohemian side. The spinning of flax, for so large a manufacture, occupies a great number of hands: in many houses it is the sole occupation; and scarcely anywhere is there a family where some person is not employed in spinning or weaving it. The distaff, and not the wheel, is generally employed; and all is carried on with a very limited capital,

there being here no factories or collective establishments.

Woollens are likewise a considerable object of manufacture, but they are in general coarse, and the value made is computed at little more than £500,000 sterling: they are made chiefly at Goldberg and Grunberg. Cotton works arose here in the latter part of the eighteenth century, and hardware has been extensively made only about the same period. The tanneries are hardly enough to supply the consumption. The total annual value of manufacture is computed at £3,000,000 sterling. In these, and the raw produce, coal, timber, and madder, Silesia carries on a considerable traffic. The imports are hemp, linseed, and hides from Russia; wine, potash, and hardware from Austria; colonial produce, silk, and the fruits of southern climates from different countries, almost all through the medium of the Oder.

The Silesians are in general of good moral habits, with little information, credulous and superstitious, impressed with a blind veneration for aristocracy and etiquette. The gentry, or, as they are styled, the noblesse, are numerous and poor as in any part: a number of them find employment in the military service. The Reformation was introduced here early. In 1609 Rodolph II. found it necessary to grant the Protestants full liberty of conscience: his successors, however, revoked the concession, the effect of which was to deprive Silesia of a number of its inhabitants. In 1703, when the Swedes under Charles XII. overran Poland, occupied Saxony, the emperor, to ward off this assailant, consented to restore to the Protestants of Silesia the free exercise of their worship: on the conquest of Silesia by Frederick II. he put all religious creeds on an equal footing. The proportion of Protestants, long inferior to that of Catholics, has of late begun to exceed it: of Jews the number in Silesia is about 12,000.

A number of parish schools have been founded by the aid of government; but, on the eastern or Polish side, much ignorance prevails. At Breslau there is a university, partly Protestant, partly Catholic. In the provincial towns there are gymnasias or high schools, Protestant colleges, and seminaries for educating Catholic priests. The common language of the country is German, but in the mountainous districts, and on the tracts bordering on Poland, the ancient dialect of the country, which is a mixture of the Polish and Bohemian, is preserved.

The tribes called the Quadi and Lygii seem to have first peopled Silesia, and to have yielded in the sixth century to a Slavonic tribe, who adopted the name of Zlesy. At present the Polish name of this country is Zlesien, and it was long a province of Poland. It was afterwards ceded to the sons of Boleslaus II., an expelled king of Poland, in the eleventh century; and, being thus divided and subdivided, was without much difficulty subdued by the kings of Bohemia in the fourteenth century; the crown seizing, as vacant fiefs, the possessions of such of the great families as became extinct. Silesia passed with Bohemia to the house of Austria, in the early part of the sixteenth century, and continued in its undis-

turbed possession until the death of Charles VI. in 1740, when Frederick II., who revived a long dormant claim to the western part of Silesia, viz. the principalities of Liegnitz, Brieg, and Wohlau, supported it by an immediate invasion. Austria took up arms, and, on being attacked on another side by Bavaria and France, received the aid of England. The result was a contest, conducted with alternate success, but terminated, as far as regarded Silesia, by the cession of that country to Prussia. But the house of Austria had no intention of definitively relinquishing it. It formed in 1756, against Prussia, a coalition of France, Russia, Saxony, and Sweden, which threatened the entire subversion of that kingdom: a danger from which she was saved by the talents of her sovereign, the aid of England, and heavy sacrifices of her wealth and population. The peace of Hubertsburg, in 1763, left Silesia in the hands of Frederick. It was now allowed to breathe from its ravages, and enjoyed a peace of forty years, inviting colonists from Germany and Poland to repair the havoc of war. In 1807 it was overrun by the French.

**SILESIA, AUSTRIAN**, that part of Silesia retained by Austria in 1742, has an area of 1845 square miles, with nearly 350,000 inhabitants. It is divided into the circles of Troppau and Teschen, and is completely incorporated with Moravia, being subject to the same civil courts, and the same military administration. It is hilly, and does not produce a sufficiency of corn for the population; but has good pasture, abundance of flax and hemp, and flourishing linen and woollen manufactures. See MORAVIA.

**SILESIAN EARTH**, in the *materia medica*, a fine astringent balsm. It is very heavy, of a firm compact texture, and in color of a brownish yellow. It breaks easily between the fingers, and does not stain the hands; is naturally of a smooth surface, is readily diffusible in water, and melts freely into a butter-like substance in the mouth. It leaves no grittiness between the teeth, and does not ferment with acid menstrua. It is found in the perpendicular fissures of rocks near the gold mines at Strigonium in Hungary, and is supposed to be impregnated with the sulphur of that metal. It is a good astringent, and better than most of the balsms in use.

**SILHET** (Srihata, a rich market), a district in the province of Bengal, situated principally between  $24^{\circ}$  and  $25^{\circ}$  N. lat. To the north and east it is bounded by a lofty ridge of mountains inhabited by many wild tribes; on the south by Tipperah and Mymunsingh; and it has Mymunsingh to the west. In 1784 it contained 2861 square miles, and the revenue was only 233,924 rupees.

It is the most easterly of the Company's possessions in Hindostan, being within 350 miles of the province of Yunan in China. Although so near to this rich empire, no sort of intercourse subsists betwixt them, the intermediate country being a confused mass of mountains covered with jungle, and inhabited by some of the most uncivilised tribes in Asia. This region has been examined only a very short way from the frontiers of Silhet; but, from the most consistent accounts supplied by the natives, there is reason

to believe the intervening space is destitute of navigable rivers, without towns or villages, and wholly trackless. These difficulties, however, are not insurmountable, and it is to be hoped the Bengal government will not leave it much longer unexplored.

Under the Mogul government, Silhet was formed into a fowjedary, or military station, more on account of its remote and secluded situation, beyond the Brahmapootra and Soormah, than from any reasonable apprehensions of foreign invasion, protected as it is by inaccessible hills, or impenetrable jungles. Its actual dimensions, since the dismemberment of several pergunnahs, are computed at 2861 miles, divided into 146 small pergunnahs, held by about the same number of zamindars. Near to the town of Silhet the country presents a novel appearance to an eye long habituated to the flat surface of the lower districts of Bengal. It is composed of a number of irregularly insulated hills, placed at a short distance from each other, and covered with trees and verdure to their summits; while to the north and east lofty mountains rise abruptly like a wall, to the height of several thousand feet, and appear as if they had, at some remote period, withstood the surge of the ocean.

During the rains the greater proportion of the land is laid under water, by the overflowing of the Soormah and other rivers, by which it is intersected, and the passage from Dacca is performed for nearly the whole way over rice and pasture fields, which in the cold season are perfectly dry. Over this tract, when the floods are at their height, there is above ten feet of water; the elevated sites of the villages appear like islands; the masts of the vessels are entangled with the branches of trees, while their progress is impeded by the thickness and adhesion of the paddy stalks. When the inundation drains off, the land is left in an excellent condition for rice cultivation; food of all sorts is consequently remarkably cheap—the average price of rice per rupee being four or five maunds (of 80 lbs. each), and coarser grains still cheaper. In addition to this supply every stream and puddle swarms with fish, which are caught, with scarcely any trouble, with a small hand net, or even a piece of a mat. As may be supposed, wages are extremely low, being from half a rupee to one rupee and a quarter per month; but the laborers being naturally averse to exertion, and never working but when stimulated by hunger, the country is on the whole very indifferently cultivated. The necessities of life being so very cheap, there is little occasion for gold and silver coins—a more minute subdivision of value being required; the whole rents are consequently paid in cowries, which are the medium also of commercial transactions. Formerly large boats were built here for the royal fleet stationed at Dacca, and square-rigged vessels have also been occasionally constructed. The chief export from Silhet is chunam or lime, which is found in inexhaustible quantities; and hence Calcutta, and the most remote stations in Bengal, are furnished with that article. Another principal export is cargoes of oranges—a considerable tract of country consisting almost entirely of orange plantations, the fruit of which

sells on the spot at 1000 for a rupee. The other productions are aguru or fragrant aloe wood, and a manufacture of wild silk, named muggadooties. Great numbers of elephants are also caught in this district, but their quality is inferior to those caught near the sea coast. Silhet and Azmerigunge are the chief towns, and the Soormah and Megna the principal rivers. In 1801, when an investigation respecting the population of Bengal took place, this district was found to contain 492,495 inhabitants, in the proportion of two Mahometans to three Hindoos.—J. Grant, Remell, &c.

SILHET, a town in the province of Bengal, the capital of a district of the same name. Lat. 24° 55' N., long. 91° 40' E. The travelling distance from Calcutta to Silhet is 325 miles, the direct distance 260.

SILHOUETTE, in drawing, a new French word, signifying a profile taken in shade. In a late translation of Lavater's Physiognomy, by the Rev. Dr. C. Moore (Lond. 8vo. 1797), this word is often used, but is never once translated, or its derivation mentioned; whence it would seem that the doctor considers it as already adopted into the English language, at least among connoisseurs.

SILICA, in chemistry and mineralogy, one of the primitive earths, which in consequence of Sir H. Davy's researches on the metallic bases of the alkalis and earths, has been recently regarded as a compound of a peculiar combustible principle with oxygen. If we ignite powdered quartz with three parts of pure potash in a silver crucible, dissolve the fused compound in water, add to the solution a quantity of acid, equivalent to saturate the alkali, and evaporate to dryness, we shall obtain a fine gritty powder, which being well washed with hot water, and ignited, will leave pure silica. By passing the vapor of potassium over silica, in an ignited tube, Sir H. Davy obtained a dark-colored powder, which apparently contained silicon, or silicium, the bases of the earth. Like boron and carbon, it is capable of sustaining a high temperature without suffering any change. Aqueous potash seems to form with it an olive-colored solution. But, as this basis is decomposed by water, it was not possible to wash away the potash by this liquid. Berzelius and Stromeyer tried to form an alloy of silicon or silicium with iron, by exposing to the strongest heat of a blast furnace, a mixture of three parts iron, 1·5 silica, and 0·66 charcoal. It was in the state of fused globules. These, freed from the charcoal, were white and ductile, and their solution in muriatic acid evolved more hydrogen than an equal weight of iron. The specific gravity of the alloy was from 6·7 to 7·3, while that of the iron used was 7·8285. From Mr. Mushet's experiments, however, as well as from the constitution of plumbago, we know that carbon will combine with iron in very considerable proportions, and that in certain quantities it can give it a whitish color and inferior density. Nothing absolutely definitive, therefore, can be inferred from these experiments.

M. Berzelius has lately obtained pure silicium by the combustion of potassium in silicated fluo-

ric gas; as also by the action of potassium on the double fluate of silica and potash, or of silica and soda. The latter salt having the advantage of containing a greater quantity of fluate of silica, under the same weight and bulk, deserves the preference. The salt is easily prepared by saturating aqueous silicated fluoric acid with carbonate of soda, when the very sparingly double salt precipitates, which is to be washed and dried, at a temperature considerably above 212° Fahrenheit. This dry matter in fine powder is to be stratified, with thin slices of potassium, in a glass tube sealed at the end, which is to be uniformly heated at once with a spirit flame. Even before ignition the silicium is reduced with a slight hissing sound, and some appearance of heat. No gas is disengaged when the salt has been well dried. The mass is allowed to cool. It is hard, agglutinated, porous, of a deep brown color, which does not alter in the air, merely exhaling the smell of hydrogen, as manganese does when pressed between the fingers or breathed upon. It is to be washed with water in successive quantities to remove the fluate of potash that is formed. Some gas is disengaged, but this soon ceases, and, though the water be raised to ebullition, the brown powder does not decompose it. The solution obtained by ebullition being very acid, the substance is to be boiled with new portions of water till the liquid manifests no signs of acidity, when it is to be passed through a filter. The powder, being dried, is of a chestnut brown (maroon) color, containing visibly heterogeneous points of a brighter hue. The first of the above washings should be with a large quantity of water, so that the liquid which becomes alkaline by the oxidisation of the potassium, may be so dilute as to have no tendency to oxidise the silicium and to dissolve it. For this reason the mass must not be treated with hot water till all the alkalinity be removed. It is thereafter to be treated with boiling water, till a drop of this leaves no stain on evaporation. This process requires much time, and a large body of water.

*Silicium*, obtained by this process, contains some hydrogen, but in less quantity, and probably in the same way as the charcoal of wood, which Sir H. Davy regards as hydrogenated carbon. It contains, besides, some silica, which proceeds from a small portion of the potassium getting oxidised at first, and in this state separating a little silica from the double salt. The hydrogenated silicium is to be heated for some time almost to redness in an open crucible, then it is finally to be ignited. Should the silicium offer to take fire, the crucible is to be instantly covered, and the heat lowered, which will immediately stop the inflammation. After this calcination, the silicium is incombustible in the air, and may be washed from its adhering silica by pure liquid fluoric acid, taking care that no iron or manganese is present; for the alloy thence resulting would dissolve entirely with disengagement of hydrogen. After being treated with this acid, the silicium is to be washed and dried. Obtained in this way, silicium has a deep nut-brown color, but not the least metallic lustre. When rubbed with a steel burnisher, it presents no

trace of brilliancy, opposing a resistance to friction, like an earthy substance. It is incombustible in the atmospheric air, and in oxygen gas. It suffers no change in the flame of the blowpipe, apparently belonging to the most infusible class of bodies. These properties appear at variance with what takes place with the silicium immediately after its reduction by potassium, for it readily burns. M. Berzelius ascribes this difference to the presence of hydrogen in the latter substance, which may be regarded as a silicuret of potassium at first, and after simple washing a hydruret of silicium. Ignition, well regulated, expels the hydrogen, without setting the compound on fire; but, if hastily induced, the hydrogen kindles the silicium, which then becomes covered with a coat of silica. The condensation which the silicium undergoes by ignition is the cause of its becoming insoluble in fluoric acid.

Silicium stains and sticks strongly, even when dry, to the glass vessels in which it is kept.

Silicium does not conduct electricity. After its ignition it is not affected by chlorate of potash, even at a red heat; nor by nitre, till the temperature has become high enough to decompose the nitric acid, and to allow the affinity of its alkaline base to act. At a white heat nitre attacks it violently.

With carbonate of potash silicium burns very readily with a lively flame. Gaseous oxide of carbon is disengaged, and the mass blackens from intermixiture with charcoal. By taking a small proportion of carbonate of potash, or of soda, as one-half the bulk of the silicium, the inflammation takes place much below ignition. With larger proportions of the carbonate, the mass swells up from the development of the gaseous oxide of carbon, takes fire, and burns with a blue flame. With a still greater proportion there is no sign of combustion; the mass does not blacken, but merely exhales the above gaseous oxide. If the incombustible silicium be heated to moderate redness on platinum foil with nitre, no effect ensues; but, if a bit of dry carbonate of soda be made to touch the silicium, a detonation will take place at the expense of the carbonate, and the mass will retain for some time its black color.

Silicium explodes with lively incandescence with the hydrated fixed alkalis at their melting temperature, much below a red heat. Hydrogen is disengaged, which burns visibly when the bulk of the materials is not too small. The same phenomenon takes place with hydrate of barytes. With acid fluate of potash, silicium explodes at the melting point of the salt, which is far under ignition. It is not altered by borax in a state of fusion. Silicium, heated to distinct redness in the vapor of sulphur, takes fire and burns, but much less vividly than in oxygen; but the combination will not take place with the incombustible silicium. In moist air, sulphuret of silicium diffuses a strong smell of sulphureted hydrogen, and speedily loses all its sulphur; but in dry air it may be preserved for a long time. At a red heat, it is roasted, affording sulphurous acid and silica.

Siliciuret of potassium combines readily at a

red heat with sulphur, constituting a true double sulphuret of a deep brown or black color. Simple sulphuret of silicium, when thrown into water, dissolves immediately, with disengagement of sulphureted hydrogen. The silicium changes into silica, which dissolves in the water, and if this be in small quantity, such a concentrated solution may be obtained as to gelatinise after a slight evaporation, and to leave silica, after drying in a transparent cracked mass. It is remarkable to see silica dissolve in such a large proportion in water, at the instant of its formation, and to lose this property by evaporation to such a degree as to become insoluble in acids. This solubility may explain the origin of the crystallisations of silica in drusy cavities, which in many cases could not contain a volume of liquid appreciably larger than that of the crystals themselves. Berzelius did not succeed in combining silicium with phosphorus.

When silicium is heated in a current of chlorine, it takes fire, and continues to burn. If the gas contain some atmospheric air, silica remains in a slender skeleton form. Silicium burns equally well in chlorine, whether or not it had previously been deprived of its combustibility in air. The product condenses into a liquid, which is yellowish with excess of chlorine, but colorless when this is expelled. This liquid is very fluid; it evaporates almost instantaneously in the open air, affording white vapors, and leaving a little silica. It has a very penetrating odor, which may be compared to that of cyanogen. Thrown into water, it floats, then dissolves in it, and leaves some silica. When silicium is heated in vapor of potassium, it takes fire, producing a compound of silicium and potassium. The iodide of potassium does not unite with silicium.

Silicium is neither dissolved nor acted upon by the sulphuric, nitric, and muriatic acids, nor even by the nitro-muriatic. But it dissolves rapidly even in the cold, in a mixture of nitric and fluoric acid, with disengagement of nitrous gas. Combustible silicium dissolves on digestion in water of caustic potash; but in its incombustible state it is not affected by the alkalis in the moist way.

Once insulated, silicium combines very reluctantly with the metals. Its remarkable affinity for platinum is known, from the experiments of M. Boussingault; but it may be heated as often and as long as we please in a platinum crucible, without any combination taking place. But when we try to reduce silicium (from silica) by potassium, in a platinum crucible, the silicium penetrates deeply into the platinum, in the spot where the potassium presses. 100 parts of pure silicium, dried in *vacuo*, were heated with carbonate of soda. The mass, treated with muriatic acid, evaporated to dryness, and strongly heated, was then dissolved in water. It left silica colored gray by charcoal, which, being washed and ignited, became snow-white, and weighed 203.75 parts. A little silica was afterwards procured from the washings, making in all 205.25. Hence 100 parts of silicium had absorbed 105.25 of oxygen. In another experiment, 208 parts of silica were obtained from 100 of silicium. Hence silica consists of

Silicium . . .	48·5
Oxygen . . .	51·5

The proportion which M. Berzelius inferred from the capacity of saturation of silica with the saline bases was 50·3 oxygen to 49·7 silicium. The number of atoms of oxygen in silica has not been determined. M. Berzelius is inclined to consider it as a tritoxide, and to call the atom of silicium 277 oxygen, being 100, or 2·77 oxygen = 1.

Silicium does not seem to belong to the metallic class of bodies, but rather resembles carbon and boron. Some philosophical methodists, says Berzelius, will consequently give it the name of silicon; but I regard this denomination as useless, since there is no true limit between the metals and the metalloids (such as boron and carbon). Carbon has the metallic lustre, and conducts electricity, and still it is not reckoned a metal. If silicium could be fused, it would possibly acquire the properties wanting in its pulverulent state. Uranium, in this form, can hardly be distinguished by its aspect from silicium; but when crystallised, it has the metallic lustre. Columbium and titanium approach also to silicium in their chemical properties. Finally, when the electrical relation of a body is regarded as its only decisive feature, it is indifferent whether we place a combustible body among the

metals or not.—*Annales de Chim. et. Phys.* xxvii, 337.

Mr. Smithson has ingeniously suggested, that silica might be viewed in many mineral compounds as acting the part of an acid. This, however, is a vague analogy, and cannot justify us in ranking silica with acid bodies. When obtained by the process first described, silica is a white powder, whose finest particles have a harsh and gritty feel. Its specific gravity is 2·66. It is fusible only by the hydroxygen blowpipe. The saline menstruum formed by neutralising its alkaline solution with an acid is capable of holding it dissolved, though silica seems by experiment to be insoluble in water. Yet in the water of the Geyser spring a portion of silica seems to remain dissolved, though the quantity of alkali present appears inadequate to the effect. Silica exists nearly pure in transparent quartz or rock crystal. It forms also the chief constituent of flints. By leaving a solution of silica in fluoric acid, or in aqueous potash, undisturbed for a long time, crystals of this earth have been obtained. The solution in alkaline lixivium is called liquor silicium. Glass is a compound of a similar nature, in which the proportion of silica is much greater. Mr. Kirwan made many experiments on the mutual actions of silica and the other earths, at high degrees of heat. The following are some of his results:—

Proportions.	Heat.	Effects.
80 silica } . . .	150° Wedg. . .	A white brittle mass.
20 barytes }		
75 silica } . . .	150 . . .	A brittle hard mass, semitransparent at the edges.
25 barytes }		
66 silica } . . .	150 . . .	Melted into a hard somewhat porous porcelain.
33 barytes }		
50 silica } . . .	148 . . .	A hard mass, not melted.
50 barytes }		
20 silica } . . .	148 . . .	The edges were melted into a pale greenish matter, between a porcelain and enamel.
80 barytes }		
25 silica } . . .	150 . . .	Melted into a somewhat porous porcelain mass
75 barytes }		
33 silica } . . .	150 . . .	Melted into a yellowish and partly greenish-white porous porcelain.
66 barytes }		

When the barytes exceeds the silica in the proportion of three to one, the fused mass is soluble in acids, a circumstance recently applied with great advantage in the analysis of minerals which contain alkaline matter.

The habitudes of strontian with silica are

Proportions.	Heat.	Effects.
50 lime } . . .	150° Wedg. . .	Melted into a mass of a white color, semitransparent at the edges, and striking fire, though feebly, with steel: it was intermediate between porcelain and enamel.
50 silica }		
80 lime } . . .	156 . . .	A yellowish white loose powder.
20 silica }		
20 lime } . . .	156 . . .	Not melted: formed a brittle mass.
80 silica }		

When exposed to the highest possible heat, magnesia and silica, in equal parts, melt into a white enamel. Silica and alumina unite both in the liquid and dry way. The latter compound constitutes porcelain and pottery ware. Equal parts of lime, magnesia, and silica, melt, according to Achard, into a greenish colored glass hard

nearly the same as those with barytes. Lime water, added to the liquor silicum, occasions a precipitate which is a compound of the two earths. The following are Mr. Kirwan's results in the dry way:—

enough to strike fire with steel. When the magnesia exceeds either of the other two ingredients, the mixture is infusible; when the silica exceeds, the only fusible proportions were, 3 silica, 2 lime, 1 magnesia; and, when the lime is in excess, the mixture usually melts in a strong heat. With mixtures of lime, alumina, and

silica, a fusible compound is usually obtained when the lime predominates. The only refractory proportions were—

Lime . . .	2	3
Silica . . .	1	1
Alumina . . .	2	2

Excess of silica gives a glass or porcelain, but excess of alumina will not furnish a glass. When, in mixtures of magnesia, silica, and alumina, the first is in excess, no fusion takes place at  $150^{\circ}$ ; when the second exceeds, a porcelain may be formed: and 3 parts of silica, 2 magnesia, and 1 alumina, form a glass. From Achard's experiments it would appear that a glass may be produced by exposing to a strong heat, equal parts of alumina, silica, lime, and magnesia. Other proportions gave fusible mixtures, provided the silica was in excess.

The mineral sommitte, or nephelin, consists, according to Vauquelin, of 49 alumina + 46 silica. If we suppose it to consist of a prime equivalent or atom of each constituent, then that of silica would be 3; for  $49:3:2 :: 46:3$ . But, if we take Vauquelin's analysis of euclease for the same purpose, we have the proportion of silica to that of alumina as 35 to 22. Hence  $22:3:2 :: 35:5:09$  the prime equivalent of silica, which is not reconcileable to the above number, though it agrees with that deduced from Sir H. Davy's experiments on silicon. I give these examples to show how unprofitable such atomical determinations are. See IRON and ACID (FLUOSILICIC).

SILICENSE, in ancient geography, a river of Spain.

SILICOUS, *adj.* Lat. *cilicium*, it should be therefore written *cilicious*. Made of hair.

The *cilicious* and hairy vests of the strictest orders of friars derive their institution from St. John and Elias. *Browne.*

SILICERNIUM (from *silex* and *cœna*, a supper on a stone), among the Romans, a feast of a private nature, provided for the dead some time after the funeral. It consisted of beans, lettuces, bread, eggs, &c. These were laid upon the tomb, and they foolishly believed that the dead would come out for the repast. What was left was generally burnt on the stone. Eating what had thus been provided for the dead was esteemed a mark of the most miserable poverty. A similar entertainment was made by the Greeks at the tombs of the deceased; but it was usual among them to treat the ghosts with the fragments from the feast of the living. See FUNERAL, and INFERIE.

SILICIS MONS, in ancient geography, a town of Italy, near Padua, on a mountain so named.

SILICOSE, *adj.* { Lat. *siliqua*. Having SIL'ICIOUS. } a pod or capsula.

All the tetrapetalous *siliquose* plants are alkalescent. *Aitbachnot.*

SILIS, in ancient geography, a river of Italy, in Venetia.—Plin. iii. c. 18.

SILISTRIA, or DISTRRA, a large town in Bulgaria, European Turkey, situated on the Danube, on its south bank, at the influx of the Missova. It is well fortified, tolerably built, and has several handsome mosques and baths. Being

out of the usual road from Turkey to Germany, it is rarely visited; but in the environs are to be seen the ruins of the wall erected by the Greek emperors. It is one of the most important frontier towns of Turkey; and in 1773 several sharp actions took place here with the Russians. It is the see of an archbishop. Population 20,000. 155 miles N. N. E. of Adrianople. Long.  $27^{\circ} 6' E.$ , lat.  $44^{\circ} 15' N.$ .

SILIVRI, or SELIVREA, the ancient Selymbria, a sea-port of Turkey, in Romania, on the western side of a promontory, near the sea of Marmora. It contains 6000 inhabitants, of whom 1500 are Greeks, and 200 Jews, and commands a beautiful prospect of the Propontis. Thirty-two miles west of Constantinople.

SILIUS ITALICUS (*Caius*), an ancient Roman poet, and author of an epic poem in seventeen books, containing a history of the second Punic war, which decided the empire of the world in favor of the Romans. He was born in the reign of Tiberius, and is supposed to have got the name of *Italicus* from the place of his birth; but whether he was born at *Italica* in Spain, or at *Corfinium* in Italy, which, according to Strabo, had the name of *Italicia* given it during the Social war, is a point which cannot be known: though if his birth had happened at either of these places, grammarians justly observed, he should have been called *Italicensis*, and not *Italicus*. When he came to Rome he applied himself to the bar; and, by a close imitation of Cicero, succeeded so well that he became a celebrated advocate, and most accomplished orator. His merit and character recommended him to the highest offices in the empire, even to the consulship, of which he was possessed when Nero died. He is said to have been aiding and assisting in accusing persons of high rank and fortune whom that wicked emperor had devoted to destruction: but he retrieved his character afterwards by a long and uniform course of virtuous behaviour. *Vespasian* sent him as proconsul into Asia, where he behaved with clean hands and an unblemished reputation. After having thus spent the best part of his life in the service of his country, he bade adieu to public affairs, resolving to consecrate the remainder to polite retirement and the Muses. He had several fine villas in the country: one at *Tusculum*, celebrated for having been *Cicero's*; and a farm near Naples, said to have been *Virgil's*, at which was his tomb, which *Silius* often visited. Thus *Martial* compliments him on both these accounts (Epig. 49, lib. xi.); and politely concludes,

Could those great shades return to choose their heir,  
The present owner they would both prefer.

In these retirements he applied himself to poetry: led not so much by force of genius as by his exceeding great veneration for *Virgil*. He has imitated him in his poem; and, though he falls far short of him, yet he has discovered a great and universal genius, which would have enabled him to succeed in some degree in whatever he undertook, especially if he had begun earlier. Having been for some time afflicted with an imposthume, which was deemed incurable, he grew weary of life, to which, says *Pliny*, he put an

end with determined courage. There have been many editions of Silius Italicus. A correct one was published at Leipzig, in 1696, in 8vo., with notes by Cellarius: but the best is that cum notis integris variorum et Arnoldi Drakenborch. Traject. ad Rhen. 1717, in 4to.

SILK, *n.s.*

SILKEN, *adj.*

SILK'WEAVER, *n.s.*

SILK'WORM.

*Sax. reole; Goth. silk;*  
*Dan. silke.* The produce  
 of the bombyx, see below:  
 the derivatives following  
 the root: and silken being often used for soft;  
 tender.

Full many a lady fair, in court full oft  
 Beholding them, him secretly envide,  
 And wished that two such fans, so silken soft,  
 And golden fair, her love would her provide. *Spenser.*  
 He caused the shore to be covered with Persian  
 silk for him to tread upon. *Knolles.*

The worms were hallowed that did breed the silk;  
 And it was dyed in mummy, which the skilful  
 Conserved of maidens' hearts. *Shakspeare. Othello.*  
 Let not the creaking of shoes, or rustling of silks,  
 betray thy poor heart to woman. *Shakspeare.*

Men counsel and give comfort to that grief  
 Which they themselves not feel; but, tasting it,  
 Their counsel turns to passion, which before  
 Would give perceptual medicine to rage,  
 Fetter strong madness in a silken thread,  
 Charm ach with air, and agony with words. *Id.*

All the youth of England are on fire,  
 And silken dalliance in the wardrobe lies.

*Id. Henry V.*

Shall a beardless boy,  
 A cockered, silken wanton, brave our fields,  
 And flesh his spirit in a warlike soil,  
 Mocking the air with colours idly spread,  
 And find no check? *Id. King John.*

These kinds of knaves, in plainness,  
 Harbour more craft, and more corrupter ends,  
 Than twenty silky ducking observants  
 That stretch their duties nicely. *Id. King Lear.*  
 Grasshoppers eat up the green of whole countries,  
 and silk-worms devour leaves swiftly.

*Bacon's Natural History.*

She weeps, and words addressed seem tears dis-  
 solved,

Wetting the borders of her silken veil. *Milton.*  
 Without the worm, in Persian silks we shine. *Waller.*

Broad were the banners, and of snowy hue,  
 A purer web the silk-worm never drew. *Dryden.*  
 The Chinese are ingenious silkweavers. *Watts.*  
 Dress up virtue in all the beauties of oratory, and  
 you will find the wild passions of men too violent to  
 be restrained by such mild and sithen language. *Id. on the Mind.*

SILK. The culture of this important article of manufacture has hitherto been considered as the exclusive property of other climates, although we have the most positive evidence that the worms when reared in this country produce a material as well calculated for the manufacturers' use as those of France and Italy. As this is a subject that has lately occupied the attention of the Society for the promotion of Arts and Manufactures, who have printed a series of valuable practical observations from the pen of Mr. Stephenson, we cannot do better than commence our article by an analysis of their contents.

It appears that Mr. Stephenson was for several years a resident in the provinces of Languedoc and Quercy, where the utmost attention

is paid to the manufacture of silk. He begins by giving some account of the mulberry tree. He observes that there are two kinds of the black mulberry tree which have been cultivated in France. The first of these bears a fruit well known, and frequently presented at table, being the same which is cultivated in our gardens in the neighbourhood of London. But the leaves of this tree have been found, from experience, to be too harsh and too succulent, to prove in every respect a proper food for the silk-worm; and the silk it yields turns out to be coarse, and of an inferior quality. The second kind of the black mulberry tree carries a fruit inferior to the other in point of size, and improper for the table; but the leaf of it has been found to be superior to the first, as food for the silk-worm; and it is less harsh, less succulent, and yields silk of a finer quality than the one first mentioned. This second sort of the black mulberry is, in all probability, the particular kind which is said to be at present cultivated in the kingdom of Valencia, in Spain, for the use of their silk-worms: and, indeed, many of their old plantations in France consist of this sort. But their new plantations consist wholly of the white mulberry tree, hereafter to be mentioned, which is the only one they now cultivate in all their nursery grounds, for the use of their silk-worms. There is a third sort, known by the name of the white mulberry, the leaf of which is more tender and less succulent than either of the other two, and has been found to produce silk of the finest and best quality.

Some people have been led to think that this kind of the mulberry tree does not carry any fruit, and that it can only be propagated by layers; but in this particular the fact stands much the other way. For, though the white mulberry may not perhaps produce any fruit in a climate so far to the north as ours, yet the truth is, that in climates such as that of the south of France, this tree carries fruit in very great quantities, though it is of a smaller kind than either of the two already mentioned. It is of a dusky white color, rather inclining a little to the yellow; and contains a number of small seeds, like mustard seed; from which large nurseries of this valuable tree are now annually raised all over the southern parts of France.

For a number of years after the culture of silk was introduced into France, the people were accustomed to employ the leaves of all the different kinds of mulberry trees before mentioned, promiscuously: and some grafts of the white mulberry from Piedmont, and from Spain, which carried a larger leaf than the one they had got in France, having been obtained from these countries, these grafts were put upon French seedling stocks, which had the effect of increasing greatly the size of the leaves, and was regarded as an acquisition, as it certainly produced a larger stock of leaves as food for the worms. The consequence of which was that this practice of grafting prevailed for a great many years all over Provence and Languedoc. But Monsieur Marteloy, a physician at Montpellier, who had made the culture of the silk-worm his particular study for a number of years together, at

last made it clearly apparent to the conviction of every body, by a regular course of attentive and well conducted experiments, that the leaf of the seedling white mulberry was the food of all others the best for this valuable insect; as the worms which were fed with this particular leaf were found to be more healthy and vigorous, and less subject to diseases of any kind, than those that were fed upon any of the other kinds of leaves above mentioned; and that their silk turned out to be of the very best quality. Since that time, namely, 1765, a decided preference has been given to this particular leaf beyond all the others.

As our British gardeners are more intelligent in their business than any of the French gardeners, it may, by some, perhaps be reckoned unnecessary to say any thing here, with respect to the culture of the mulberry tree: but when it is considered that the culture of this tree has been so anxiously attended to in France, for a long period of years past, and they succeed perfectly in this culture, it may not be deemed altogether improper to add here the method used in France in cultivating the mulberry tree.

Mr. Stephenson goes on to observe that their first object is to make choice of a spot of ground for their seed bed, of a gravelly or sandy soil, which has been in garden culture, or under tillage for some time, and which they know to be in good heart. When this ground is thoroughly dressed, they make drills at the distance of two feet from each other, in which they sow the seeds, in the same manner as they usually do lettuce for salads. They then cover the seeds lightly with some of the finest earth, after putting it through a sieve; and, if the weather happens to be dry, they water it slightly once or twice a week, as they judge to be necessary. These seeds they sow as above, at any time from the end of April to the end of May, and even during the first week in June; and some gardeners, the better to ensure success, were in the practice of sowing the seeds at three different times during the same season: to wit, the first sowing in the last week of April; the second about the middle of May; and the third in the beginning of June. When the plants are fairly above ground, they take particular care to keep them clear from weeds, and, from time to time, to point with a spade or a hoe the ground in the intervals betwixt the different drills.

After remaining for two years in the seed bed, they take up the plants: such of them as are of the size of a writing quill, they plant out in the nursery grounds; each plant at two feet distance from each other in the row, and the rows at three feet distance from each other, that there may be room for cleaning and dressing the ground betwixt the plants. At transplanting, they cut off nearly half the root, and also cut off the tops at about six or seven inches above the ground. All the other plants, which are too small for the nursery, they plant out thick by themselves, to remain for another year, or two, if necessary: after which they plant them out in the nursery grounds as above. The most proper time for transplanting the mulberry tree is just after the fall of the leaf in autumn.

When the plants in the nursery are sprung, they take care to strip off the side buds, and leave none but such as are necessary to form the head of the tree. If the plants in the nursery do not shoot well the first year, in the month of March following they cut them over about seven inches from the ground, which makes them come on briskly the year following. When the plants are grown to the size of one inch diameter, they plant them out in the fields where they are to remain, making the pits where they plant them of the size of six feet square, and dressing the ground for twenty inches, or two feet deep.

During the first year of planting out, they leave the whole buds which the trees have pushed out on the top until the following spring, when they take care to leave none but three or four branches to form the head of the tree; and, as the buds come out, they take off all those which appear upon the body of the tree, from the bottom all the way up to those which are left to form the head of the tree; and for several years after, at the seasons above mentioned, they take care to open the heads of the trees, when too thick of wood, and particularly to cut off any branch which seems to take the lead from the rest, and to engross more of the sap than what falls to its share, that the different branches may increase equally as much as possible. After the trees are planted out, and likewise while the plants are in the nursery grounds, they take care to dress the ground about the trees regularly three or four times a year, which greatly assists the trees to get on.

Here it is proper to mention that it is the practice in France to plant out some of their young plants from the nursery by way of espalier, in some sheltered situation, in a garden, for example, where the soil is not over rich: and, if it can be had, where the soil has a great proportion of gravel or sand; the intention of which is, to procure early leaves for the worms in their infant state; as these leaves generally come out more early upon dwarfish plants in a sheltered situation, than upon the trees planted out in a more open exposure; and upon this occasion they have also recourse for tender leaves to their young plants in the seed bed and nursery grounds.

Any quantity of the seed of the white mulberry can be obtained either from Montpelier or Marseilles, where it is regularly to be found for sale in the seed shops. It may also be obtained by the same means from Spain; the seed from which country is even preferable to that from France, as the Spanish tree carries a larger leaf than that of France, and has the leaf equally tender and good as the other, when used from the seedling trees.

From the experiments carried on by M. Marteloy, that gentleman made it fully appear that the leaves of the trees which grew in a rich soil were by no means proper food for the silk-worm, as they were too luxuriant and full of juice for them; and that the leaves of those trees which were raised in a gravelly or sandy soil, where no manure was employed, were greatly to be preferred.

From these experiments, also, one of the rea-

sons, and apparently the principal one, may now be pretty clearly pointed out, which rendered abortive the trials made in England, during the reigns of James I. and Charles II., for introducing the culture of silk into Great Britain; though that reason was altogether unknown in England, at the times these different trials were made. It appears to have been only this, that they had on other food to give to their worms but the leaves of the black mulberry, carrying the large fruit usually presented at our tables, which is now altogether rejected in France as an improper food for the worms; and which was rendered infinitely more destructive for these insects by the trees which produced them having been all of them reared in the richest grounds in England, namely, in the garden grounds about London, which we know are in a manner yearly loaded with dung.

The mulberry trees ought not to be pruned the first year after planting out, for fear of making them bleed too much; but in the second spring it is reckoned advisable to dress their heads, and to continue to repeat that dressing yearly, during the next ten or twelve years; taking care to make them hollow in the middle, so as to give a free passage for the air, and to render it easy to gather the leaves. After the first twelve years are over, it will be sufficient if a dressing of the same kind is regularly given to them once every three years. But as some of the branches may probably be broken annually, in gathering the leaves, care must be taken to prune all such branches as may happen to be thus broken, to prevent the trees from suffering materially by such accidents. In planting out the mulberry tree, in the field where it is to remain, care must be taken to cover the roots properly, so that the earth may not lie hollow upon them, which would injure the plant. They should also take care to prop the different trees with stakes, to prevent them from wind-waving; placing straw next the body of the tree, to prevent the bark from being hurt; and it will be proper also to surround them with briars or brambles, to preserve them from all injury from cattle.

Here it is proper to remark that the second crop of leaves which come out upon the mulberry trees, after having been stripped of their first leaves for the use of the silk-worm, are not allowed to fall off themselves in the autumn. They are gathered for the second time with care, a little before the time they would fall naturally, and are given for food to their sheep, and eaten by them with greediness, and by that means turn out to good account to the farmer. Before the culture of silk was introduced into that part of Languedoc which is near to the mountains of Cevennes, the peasantry over all that neighbourhood were miserably poor, as their soil, which is mostly gravel and sand, was incapable of carrying crops of any kind of grain whatever. But as it was found, upon trial, to answer remarkably well for the mulberry tree, the people entered with great alacrity into the culture of silk; and they have succeeded so well in that lucrative branch, that, from having been amongst the poorest, they are now more at their ease than most of the peasantry of that kingdom.

As an encouragement to the small heritors and farmers to plant mulberry trees upon their grounds, the French government are at an annual expense in keeping up large nurseries of these trees in many different parts of the country, whence the small heritors and farmers are liberally supplied gratis with whatever numbers of these trees they desire to plant out upon their grounds; and proper directions are ordered to be given along with the trees, by the gardeners who are charged with the care of these public nurseries, that the people to whom the trees are thus given may know how to treat them properly. This beneficent public measure is attended with great advantage to the country, as the poorer people are by this means saved from the trouble and expense of rearing the trees, until they come to be of a proper size for planting out in the fields, where they are intended to remain.

When the young mulberry trees are in the seed bed, and even when afterwards planted out in nursery grounds, and likewise for several years after they are planted out in the fields to remain, you must be careful every night, in the spring and summer seasons, to examine with care, all round your plants, for a little snail without a shell, which is very fond of the bark of these trees when young, and preys upon them prodigiously. These snails will cut over your young plants in the seed beds and nursery grounds, and will even continue to prey upon the trees till they are pretty old; and, though they do not absolutely kill the trees when planted out, yet they hurt them greatly, and retard their growth. These snails, therefore, must be gathered up every night as above mentioned, a little after sun-set, which is better than in the morning, because the mischief they occasion is generally done in the night; and they must be burnt, or otherwise effectually destroyed; for if you do not kill them they will find their way again to the trees.

Mr. Stephenson then proceeds to give an account of the manner used in France for disengaging the seeds from the fruit of the mulberry, which requires a considerable degree of labor as well as attention. Having gathered the quantity of fruit you propose to set apart for seed, which must be thoroughly ripe before it is pulled, you put the fruit into a large tub or vessel, where you cause a person to tramp and press it with his bare feet, in order to bruise the whole of it thoroughly, and by that means disengage the seed from the little pods or cells in which it is contained. You must at the same time have in readiness another tub, which must be pretty deep, into which you introduce a piece of flat wood, which must be made to rest upon the sides of the tub, at the distance of six, eight, or more inches from the bottom of the tub, as you shall judge to be necessary for your quantity of fruit. This cross piece of wood is calculated to support a round cane sieve, which is to rest upon it. This sieve must be very fine, that is, the holes must be very small and close set together, that as little of the pulp of the fruit as possible may go through the holes along with the seed.

Things being thus prepared, and the tub filled

so far with water that it may rise more than half way up the brim of the sieve, when placed upon the piece of wood, you then put a handful or two of the bruised fruit into the sieve, which you rub hard with your hands upon the bottom of the sieve, in order to make the seed pass through the holes, and every now and then you lift up the sieve with both hands, and shake it to make the water pass through it, which carries the seed along with it. Besides rubbing the fruit with your hand upon the bottom of the sieve, as above, you also take it and rub it heartily betwixt the palms of your hands, rubbing the one hard against the other; as it takes a great deal of work and pains to get the seeds disengaged out of their little cells, and must be done effectually before the seeds will pass through the holes of the sieve. This work must be repeated till you observe that the whole of the seed has passed through the holes of the sieve; after which you throw aside the pulp, and must proceed in the same manner with the rest of the fruit, till you have finished the whole. You then take the sieve and piece of wood out of the tub, and pour off all the water, when you will find the seed at the bottom; but along with it a great quantity of the pulp, which has been forced through the holes of the sieve, in rubbing the fruit hard upon the bottom of it with your hand, as above mentioned.

It should be noticed that all the seeds which swim upon the surface of the water are light and good for nothing, and must, therefore, be thrown aside. You then put the pulp and seed, which you find mixed together at the bottom of the tub, into another vessel, and fill the tub with water as at first, having put the piece of wood and the sieve in their proper places as before, after which you pass the pulp and seed, by degrees, through the sieve, by rubbing it with your hand upon the bottom as before, and lifting up the sieve from time to time, with both hands, and shaking it, as already mentioned. In passing it this second time you will disengage a great quantity of the pulp, which you throw aside from time to time, as soon as you observe that none of the seed remains amongst it. You then pour off the water as before; and, if you find that there is still some of the pulp remaining with the seed, you must pass it a third time through the sieve, which will effectually clean it, if your sieve is fine enough. If your sieve is too coarse, that is, if the holes are too large, it will occasion you a great deal more work, as you will be obliged to pass it oftener through the sieve, since that operation must be repeated till the seed is perfectly clean; after which you must spread the seed upon a clean cloth, and expose it to the sun, till it is thoroughly dry. Three days, or even four days, of a full sun are necessary to dry and harden the seed properly for keeping.

Upon this part of our subject it seems proper to add that in a cool moist country, such as about Paris or London, it is reckoned the mulberry tree carries a double, nay, nearly a triple quantity of leaves to what it can do in the hotter or drier climates, such as that of the south of France, which is judged to be owing to the moisture of the climate, and the superior rich-

ness of the soil. In a cold moist climate a person is not able, even with the utmost care, to produce above the half of the cocoons from the same quantity of eggs which can be done in a warmer and drier climate. But, as in the colder climate the mulberry tree carries nearly three times the quantity of leaves, which it can do in the other, thence it arises that the colder climates, such as those before mentioned, are able, upon the whole, to raise at least as much silk, from the same quantity of eggs, as the warmer countries; because the quantity of food is the great article, as the grain or eggs of the silk-worm can easily be multiplied to as great a quantity as you please.

Having thus gone through the articles of greatest importance in relation to the first and leading branch of our subject, the next which naturally falls to be considered is the method observed in France in hatching the worms. But, before proceeding to this article, it may not be improper to premise the following particulars, as they seem justly to demand a very particular attention. .

Here then it must be observed that the greatest care ought to be taken to procure healthy good seed or eggs, because it has been ascertained, from repeated experience, that the eggs from those houses where the worms were infected with bad air carries along with it, to the worms produced therefrom, the same distempers to which the worms of the preceding year were subject. The eggs, in order to be properly preserved, should be kept in some dry place, with a free air not too hot; and you should avoid keeping them in any vault or cellar under ground, because any kind of damp is found to be destructive to them.

The eggs of the silk-worm have been found to degenerate in the space of five years; hence a change from time to time is judged to be necessary, taking care to have the eggs brought from a warmer to a colder climate. This, however, must be done by degrees, and not carried at once from one extreme to another. For example, eggs brought from the Levant, the Isle of Cyprus, or from other countries of the same latitude, ought not to be brought at once into such a cold climate as that of Flanders or the north of France; but should be first brought into such a climate as that of Provence or Languedoc, whence, after having remained there for two years, they can be brought with safety into the colder countries.

The first year that the eggs are brought from a warm to a cold climate, you must not expect great success from them: on the contrary, you will find, though the utmost care and attention are given to them, that the greatest part of the worms will die. But still you will be able to save enough to stock yourself sufficiently with eggs, which every succeeding year will be found to answer better as the worms become naturalised to the climate, which can only be brought about gradually; and indeed more time will be requisite for this purpose in Britain than in France, as the climate upon the continent is more fixed and steady than with us in England.

In transporting the eggs from one country to

another, especially when this is done by sea, you must order them to be put into a bottle, which ought not to be filled more than half full, that the eggs may not lie too close together, which might run the risk of heating them, and causing them to hatch. The bottle being but half full, leaves sufficient room to the eggs to be tossed upside down, by the motion of the vessel, which keeps them cool and fresh, and hinders them from heating. After putting the eggs into the bottle, let it be carefully corked; a cover of leather put over the cork; and let that be sealed, to prevent any danger of changing the eggs. When corked and sealed, as above, put the bottle into a double case, or box of wood; not only to preserve the eggs from all damp from the sea or other ways, but also to protect them from too much heat, which would cause them to hatch. If the bottle is too full, the eggs will lie too close upon one another, and will in that case heat of themselves, and hatch, and consequently in both cases must be lost.

The eggs that are duly impregnated by the male butterfly are of a gray cindery color, which color they preserve till they are properly prepared for hatching. The eggs which are not duly impregnated are readily to be distinguished from this circumstance, namely, that after having been kept for some time they always continue to be of a yellow color; and I need scarcely add that all such eggs are good for nothing, and ought therefore to be thrown away. There is no distinguishing betwixt good and bad eggs, but by the change of color, after being kept for some time as above mentioned. One ounce of eggs will produce 40,000 worms; and so in proportion for a larger or smaller quantity.

The advancement of the season determines the time of preparing your eggs for hatching, as you proceed to that as soon as you observe that there is a prospect of having a sufficient quantity of food for your worms, by the advancement of the leaves of the mulberry. But, in order to be properly prepared for this work, you must begin a month before the usual time of hatching; first, to put your eggs in little divisions, from half an ounce to an ounce, which you must place upon a piece of clean white paper, upon plates, for example; and put those plates containing the eggs in a place a little warmer than where you had kept them during the winter; for example, if you have an alcove bed, place them upon the shelf within the alcove. Let them remain in that situation for the first five or six days; after which you must prepare some little chip boxes, perfectly clean and neat, seven inches long, four inches broad, and four inches high, and cover them on the inside with clean white paper, into which put the different divisions of your eggs, having a small box for each division, and place these boxes in a basket, upon a stool or chair, at the foot of your bed, making one of the mattresses of your bed go underneath the basket; and cover the basket on the top, first with some cover of woollen cloth, which pin close over it, and above that place a bed cover above all, so as to keep in the heat communicated by the mattress to the eggs; in which situation let them remain for six days longer;

after which increase the heat to  $14^{\circ}$  of Reaumur's thermometer, preserving that heat equal, night and day, by means of a little fire in some corner of the room at a distance from the bed. In the morning, when you get up, put a heater of one kind or other; for example, a tin bottle with hot water, or a foot stove, into your bed betwixt the sheets, and proportion that heat so as to equal the heat you give to the bed when you lie in it yourself, keeping up the same heat, as nearly as you can, until you go to bed again yourself in the evening. Having kept them in this situation for eight or nine days, you must then put your different divisions of eggs into little pieces of old linen cloth, which must be washed thoroughly clean for that purpose, as the least dirtiness in the cloth would prove prejudicial to the eggs: each piece of cloth should be of the size of a foot square; turn up the ends of the piece of cloth, and tie them with a bit of thread as near to the top or end as possible, by means of which the eggs will lie loose, and can be shook and turned from time to time, without untying the knot; replace these packets in the basket, and cover them up as before, turning and shaking the seed in the packets three or four times a day, that it may receive the heat equally. On putting the eggs into these packets, increase the heat to  $14\frac{1}{2}^{\circ}$  of the thermometer, and keep up that heat night and day, as equally as possible: for which purpose have a couple of thermometers in your room for your direction. After the eggs have remained in the little packets for three or four days, increase the heat to  $15^{\circ}$ ; and in four days more, if the weather seems settled and very promising, increase the heat gradually to  $16^{\circ}$ , visiting and turning the eggs from time to time as before.

When the eggs begin to turn white, and the mulberry trees are so far advanced as to be out of danger from cold winds or slight degrees of frost, increase the heat gradually to  $17\frac{1}{2}^{\circ}$ , or  $18^{\circ}$  at most, to quicken the hatching of your eggs, and to make the worms come out as nearly at the same time as possible; but never increase the heat to more than  $18^{\circ}$ , because a greater heat never fails to push the worms too fast, and to render them red at their first coming out. When the worms are red at their first coming out, it is a sign the eggs have either been bad, or ill kept over winter, or overheated; that is, too much forced when laid to hatch. Worms of this color are good for nothing, and are therefore to be thrown away, to avoid the expense of feeding them, since they will never produce cocoons. When the worms are entirely black, upon their first appearance, it is a sign of their having been perfectly well managed, which gives great hopes of success.

When the eggs first begin to take a white color, put them into little chip boxes, and cover each box with a piece of clean white paper, pricked with many holes in it, to allow the worms to come through, taking care to inspect and shake the eggs from time to time in the boxes, that they may have equal access to the heat; and, when the worms are ready to appear, put a few mulberry leaves upon the paper, to which the worms will readily attach themselves as they

come out; and, by means of the leaves, you can easily take out the worms as they appear, in order to put them into different little boxes; and then give them some of the tenderest leaves, cut into small pieces, to feed on, giving them at the rate of three meals each day. As the leaves when very young will dry so much, even in an hour's time, if exposed to the open air, as to be unfit for the use of the young worms, you must put them into a clean glazed pot; but take care to place them loose, that they may not press too much upon each other; cover the head of the pot with a wet linen cloth, and place the pot in a vault or cellar (or, in case you have none, into the coolest part of your house), by which means the leaves will keep fresh and good for two or three days together. Besides, you must take care to have always in the house at a time a stock of leaves sufficient at least for three days' provision for your worms, to secure you in food for them during such length of time, in case of wet weather, as nothing is more pernicious to the worms than giving them wet leaves for their food; for which reason be careful never to pull the leaves when wet, either with rain or dew, except on absolute necessity; and in that case you must spread them out, and turn them from time to time with a long wooden fork, that the leaves may be perfectly dry before you give them to the worms.

It may here be added that it is the general opinion, in France, that the leaves afford a more wholesome food for the worms when they have been gathered four or five hours, than fresh from the tree—and more particularly so if the trees grew upon any soil other than sand or gravel, because the keeping them so long so far diminishes the over richness of the leaf. The persons employed in pulling the leaves must be careful to have their hands clean, and free from every strong offensive smell, such as that of garlick, onions, or tobacco, &c.; and they ought to be particularly attentive not to bruise the leaves in pulling them.

When the worms are first hatched, keep each day's production separate by themselves, as it is of high consequence to have each parcel brought up as equal as possible, that all the worms contained in it may be in readiness to mount for making their cocoons at one and the same time. After setting apart separately the production of each of the first four days, what then remains of the eggs to be hatched may be thrown away, as these later worms are always found to be weakly, few of them completing their cocoons; so that the attempt to rear them is always attended with an unnecessary waste of leaves, besides the trouble they occasion to no purpose. When the worms are just come out, keep them in a heat not exceeding  $15^{\circ}$ ; and even then there is no occasion to cover them by putting on the heads of the boxes, as it is better for the worms to have abundance of free air. But, if the weather should happen to prove cold, you must in that case put on the heads of the boxes at night, or cover them with a double napkin, taking care, however, not to let it touch the worms, for fear of hurting them; and take off the head of the box or napkin in the morning, when you give a

feed to the worms, as early as you can; at four or five o'clock, but not later than the last. In that early state the three different meals should be given to the worms at the distance of six hours from each other. When the worms are coming out they are not to be left scarcely a moment, as they ought to be gathered from the boxes as fast as they make their appearance; and, as this work goes on in the night as well as the day, it becomes a very hard task at that time. M. Marteloy, who always carefully attended to this particular himself, generally went to bed at nine o'clock in the evening during this critical period and rose again at midnight, which was quitting them as little as possible. But this great attention at this time is only requisite in large operations; for example a pound of eggs, or any quantity above it.

Before proceeding to the further treatment of the worms newly hatched, it may be proper here to give some description of the stage and baskets necessary for the carrying on of this culture, as these ought to be in readiness some time before they are wanted. The stage ought to be erected in a large room, with windows on each side of it, so as to be able to command a thorough air when necessary, the walls and floor of which should be examined with the strictest attention, in order to fill up every little hole or crevice that can give access either to rats or mice, as both these animals eagerly devour the silk-worms whenever they can find an opportunity for that purpose. In Languedoc and Quercy they make the stage six feet, but more frequently only four feet and a half broad, so that a person, by going first to the one side and afterwards to the other, may be able with ease to reach over the whole breadth, both for the advantage of giving the leaves to the worms, and for clearing away their litter more easily. At every nine feet distance, in the length of the stage, they fix a post in the floor of a height sufficient to support the roof, and to those posts they nail a piece of wood across the stage, which piece of wood serves to support the baskets to be hereafter mentioned which rest upon the cross-bars of wood at the two ends; so that these bars ought to be four inches broad, which allows two inches for each basket to rest on, as the baskets join the one to the other at the cross bars. The stage, being four feet and a half broad, takes two of these baskets to fill up its breadth. They make their stage to consist of as many shelves as the height will admit of, keeping at the distance of twenty inches from each other. The lowest table or shelf ought to be made six inches broader than the shelf immediately above it, that the lowest may project three inches on each side farther than the one above it; and so on in proportion with all the other tables or shelves; the uses for making this difference of breadth in the different shelves shall be afterwards particularly explained.

It has been already observed that rats and mice are extremely destructive to the silk-worms when they can get access to them; for which reason every precaution should be used to protect them against such dangerous visitors. For this purpose, therefore, the following one is ge-

nerally attended to:—They cover the foot of each of the posts of wood which support the stage with a piece of strong smooth paper, which is nailed to the wood with tacks, to the height of a foot above the floor; by which means, when these vermin attempt to mount, their feet slide upon the paper, so that they can get no hold. A hoop of glass of the same height, made of a size proper for the wood, might, perhaps, be found to answer the purpose better. The ant, or pismire, is also a most dangerous enemy to the silk-worms; to guard them from which, the usual practice, where there is any danger from these insects, is to put a quantity of hot lime round the foot of each of the posts which support the stage, which fully answers for that purpose. Cats and poultry of all kinds are likewise destructive to the worms, and must therefore also be guarded against with care. When the worms are young, they are put into wicker baskets three feet long, and eighteen inches broad, the edges or sides of which are made from two to three inches high. They make them of that size in order to be the more portable.

When the worms come to be placed upon the stage, they are put into baskets four feet and a half long, and two feet three inches broad, and the sides or edges of them are from two to three inches high, and of the thickness of about three quarters of an inch. The bottoms of the baskets are made of plaited reeds, after being split in order to make them lie flat. They are bound all round with a slip of wood, a little more than an inch broad, and about a quarter of an inch thick, to keep them together, which is nailed down, and three cross bars of wood are nailed across the back of each basket to keep it firm.

It is proper to observe that care should be taken to place the stage in such a position as not to allow the sun to dart directly upon the worms, as they are not able to bear the heat of it in this matiner when it is great. It will even kill them, especially when they are young; and, if it should not go that length in a colder climate than the south of France, it will, notwithstanding, have the effect to torment them, and render them very unquiet, and prevent them from eating with their usual appetite. If the sun darts upon them when they are large, you will see them fly from it as fast as they can, and seek for shelter in the shade, even at the expense of the want of their food. When young, they are not able to get out of the way, and by that means are often killed by it, as above mentioned.

But to return to the treatment of the worms upon their being newly hatched: it is proper to observe that too many leaves should not be given to them at one time, and that the leaves given should be spread very thin; because, if too thickly put on, a great number of the worms, as they are then so small, will run the risk of being lost amongst the litter, from which they will not be able to disengage themselves; and you must be careful to cut the leaves small during the first ten or twelve days, where the number of your worms is such as to admit of your doing so: but, if your quantity of worms is large, it would require too much work to cut the leaves for them, so that in such case you must give them entire.

When the worms are in their first age you need only clear away the litter once, because their ordure at that time dries as fast as they make it, being in small quantity. When the litter is to be taken away for the first time, you have only to turn the parcel upside down, and so pull off such a quantity of the litter as you find necessary, which is the most expeditious way of cleaning them at that time. In giving the leaves to the young worms, you must make the leaves lie hollow upon them, to give air to the worms. When put on too flat and close, they prevent that free circulation of the air which is at all times necessary for the health of these insects.

During the whole of the first age, the leaves of the young plants of the mulberry, in the seed bed and nursery, as being the tenderest, are greatly preferable to the leaves of older trees as food for the young worms, for which reason it becomes of importance to have always a succession of young plants coming on yearly in your nursery grounds.

When the silk-worms enter upon their sickness, they abstain from that moment from all manner of food. As soon, therefore, as you observe some worms of a parcel begin to grow sick, in place of three give them only two meals a day; when more of them sicken, confine them to one meal only; and from the time you observe most of them sick you must give them no more food, till the whole parcel, or at least the far greatest part of them, get over their sickness (by having cast off their old skin), that you may carry them all equally on, at least as nearly so as possible, which saves a vast deal of trouble in the management.

When the silk-worm gets over his first age or sickness, he is of a grayish color, and his little trunk, or point of his head, is of a jet black color, by which he is then distinguished. When he gets over his second sickness that little trunk is of a brown color. When he gets over his third sickness his head is remarkably large, which is the distinguishing mark at that time. And, when he gets over his fourth sickness, he is of a brownish-yellow, or deep buff color.

You must not clear away the litter from the worms while they are about changing their skin, or what is called their sickness; but as soon as they have got clear of their old skin then you are to remove all litter.

During the second age it is advisable still to continue to feed your worms with the leaves from the young plants in your nursery, as these are still preferable to those of older trees for the worms at this time. You must now begin to be attentive to clear away the litter from time to time, so as to prevent all danger of its heating, which proves highly injurious to the worms. These insects are remarkably fond of cleanliness, which besides helps to enliven them, and gives them a keen appetite for the first leaves which are given to them always after cleaning. The litter is taken away in the following manner:—You scatter some fresh leaves upon one corner of the basket, to which the worms having attached themselves, which they will readily do, you then take up the worms by means of the leaves and stalks they cling to, leaving the litter under-

neath. Having thus taken up all the worms from that corner, and placed them above those adjoining to them, you then clear away the litter from that corner, and carefully sweep together, with a little broom of twigs or heath, all the refuse and excrement, which you must remove entirely before you replace the worms in their station; and in the same manner you must proceed with the rest, till you have thoroughly cleaned the whole basket.

During the third age make use of the leaves of such trees as have been planted out in the field, but reserve the leaves of your oldest trees for the fourth age, as these last leaves are reckoned the best for the worms when come to their maturity. Be attentive to cleaning away the litter as before directed, which, during the third age, should be done at least four or five times; and take care to clear away, from time to time, all dead worms the moment you observe them; and to throw aside also regularly all such worms as appear to be diseased, to prevent them from infecting the rest, which will happen if this article is not pursued with the strictest attention. All the worms which you observe to grow of a yellow color, and to have their skin shining, are strongly diseased, and must be immediately thrown away, for fear of infecting the sound ones. These diseased worms sometimes void a yellow liquid at the tail, and it often also bursts out at other places of their bodies. These must always be attentively removed the moment they are observed; but it becomes more essentially necessary before the worms enter into their third sickness, because at this time they become most dangerous, by voiding the yellow liquid above mentioned, which is poisonous to the worms, and exceedingly contagious; insomuch that every worm that happens to touch this liquid is sure to be infected with the same distemper, which has hitherto been found to be incurable.

It has been remarked that it is improper to change the worms during their sickness, because it may occasion the loss of some of them. But it is necessary to add that, if the litter at that time should prove to be in such quantity as evidently to run the risk of heating, before the worms can get quit of their old skins, which they generally do not accomplish in less time than two days and a half, it is better to suffer the loss of a few worms, by removing the litter at that time, than to run the risk of losing the whole parcel, which undoubtedly would happen if the litter should be heated before the operation is over of their changing their skins. This article of keeping the worms clean will appear to be of high importance in the silk culture, when it is added that it is commonly computed that the loss sustained yearly in France, by the death of the worms during the times of their four different sicknesses, by being smothered in the litter, by the great quantity of litter, leaves, and worms above them, and by the litter's happening to grow damp, and to heat at these critical periods, is not less, upon an average, than between 2,000,000 and 3,000,000 of livres annually, which is equal almost to a tenth part of the whole yearly produce of silk in France, which is computed at 30,000,000 of livres.

Being now arrived at the fourth age, the time approaches when the worms will mount in order to form their cocoons; and the person, therefore, who pursues the culture of silk, must now begin to prepare for that important period. One of the first objects of his attention must be to provide himself with a sufficient quantity of small brush-wood, for making the cabins of the worms; and there is nothing more proper for this purpose than heath or broom, when either of these can be obtained; when neither heath nor broom is to be had, any other kind of small brush-wood will answer, preferring always such as is bushy at the top, and whose twigs are of a sufficient strength to support the weight of the worms. But it is to be remembered that the slender brush-wood is the best, that you may be able to bend it which way you will. Strong brush-wood is not so pliable, and by that means not proper for the purpose. Having provided your brush-wood, it may be proper to prepare a parcel of baskets, for such of your worms as are soonest ready for mounting, in the manner practised at Montauban, in Quercy, which is done as follows:—You take a round willow basket, which you dress with brush-wood, putting the wood round two-thirds of the basket, and leaving the other third open for putting in the worms, and to give an opportunity to clear away their litter. You then pull the ends of the wood together at the top, so as not to press too closely upon each other, and so tie them with a little twine or pack-thread, to keep them in their place; after which you put a paper cap, pretty large, upon the top of the wood, it having been found that the worms are fond of making their cocoons under a cover of this kind, as it affords an opportunity of attaching some threads of silk to the paper, which enables them to fix their cocoons the more firmly in their place.

In putting up the cabins, on the stage, the two rows of brush-wood at the extremities of the stage are made much thicker than the others, especially for six or eight inches above the shelf, to prevent the worms from getting out at the ends and falling over the stage. In putting up the other rows, you lay a little piece of wood, or a reed, across the stage for each row; and, in putting up the brush-wood, you make the first turn to the right hand, and the second to the left; and so alternately, keeping the reed in the middle, which binds all fast.

In dressing the stage with the brush-wood it is advisable to cover the pillars which support it, and to cover likewise the top of the stage with brush-wood. In constructing the cabins great care must be taken to put up the brush-wood in such a manner as to allow a passage for the worms between the different branches, which, however, must not be too wide; and it is right to make a great number of the points of the brush-wood touch the shelf, because it affords the greater opportunity to the worms to mount. Many people at Montauban put a number of roses, or other sweet-smelling flowers, upon the pillars which support the stage, and in other parts of the room, with a view to sweeten the air. But the best apparent means for this purpose is to take care to keep up a free circulation of fresh

air in the room, by keeping open all the windows, and the doors also, if you find that to be necessary.

In forming the arches of the little cabins with the brush-wood there is always a little opening at the top of each pillar, occasioned by the curve or top of the circle. Take care to make this opening pretty wide, because it has been observed that the worms make choice of that opening, by preference, to fix themselves in making of their cocoons. In order to make this opening of the width it ought to be, the brush-wood should not be altogether straight, but rather crooked or bending. These openings are not only evidently the choice of the worms; but another advantage also arises from them, namely, that your cabins by this means contain a greater number of worms than it is possible for them to do when these openings are too small, and consequently fewer cabins will answer your purpose. When the brush-wood is quite straight, it must necessarily occasion these openings to be made. The brush-wood ought to be quite stripped of its leaves, and perfectly dry.

If, in forming the cabins, you place the brush-wood quite upright, the worms when mounting run a great risk of tumbling down; and those worms which tumble down are for the most part destroyed by the fall. In order to avoid this inconvenience, you must make the brush-wood which forms the sides of the arch slope a little, by which means you secure much firmer footing to the worms in mounting. Besides, when you form the cabins, you must be at pains to cut off all the very small slender shoots, which when left to themselves, and not properly bound in with one another, have not strength sufficient to carry the weight of one worm, far less of several; and which, if left, must for that reason always occasion the loss of a good many worms, by their tumbling down, as above mentioned.

In describing the stage, it was said to be proper to make the lowest shelf six inches broader than the one above it, that the lowest may project three inches on each side further than the one immediately over it; and to make the same difference of breadth in all the other shelves progressively as you go up to the top of the stage, which three inches of breadth in the different shelves is intended to receive the worms which may happen to fall from the shelf above. And therefore these different projections must be covered with brush-wood, when once your cabins are well furnished with worms, as this will help to break the fall of such worms as may happen to tumble down. And for the same reason it is advisable, when once your cabins are well furnished with worms, to put a little brush-wood in the bottom, and at the entrance of each cabin, as it will be of service to such worms as fall from the brush-wood above, and afford them a proper convenience for making their cocoons in case they should be so stunned with the fall as to disable them from mounting again on the branches.

But, to return to the treatment of the worms during the fourth age: as soon as you find several of your worms have got over their fourth sickness, you must pick them out and put them by

themselves; that is, all those that get over that disease for the first two days may be put into one parcel, those of the next two days into another parcel, and so on with the rest, that each separate parcel may be carried on as equally as possible. The most attentive care must also be given to clear away the litter regularly every day; and, if it can be done, it would be advisable to clear away the litter twice in the twenty-four hours, especially during the four or five days immediately before mounting. If this cannot be done, as it is often found to be difficult to get it accomplished when the quantity of worms is large, you must, however, constantly make it a rule to clear away the litter regularly in such a manner as to prevent it at any time from increasing so much in quantity as to make it run the smallest risk of growing damp and heating, which never fails to destroy the worms.

Many people, during the four or five days which precede mounting, which the French call the grande fraize, are in the custom of giving from four to five meals a day to the worms, giving a large quantity of leaves at each meal. But it seems much more advisable to give them fewer leaves at a time, and, to repeat their meals oftener even to the number of eight or nine times in the twenty-four hours, according as you find their appetite; by which means the leaves are more quickly and thoroughly eaten up, without occasioning so great an increase of the litter. But, what is of still more consequence, the fresh leaves so often repeated never fail to give a fresh edge to their appetite; so that, in fact, in the space of twenty-four hours, the worms actually eat up a much larger quantity of leaves than they could have done by following the other practice of four or five meals a day, as none of the fresh leaves are spoiled by their treading upon them. This practice of course hastens the worms to their full maturity, and upon the whole saves a considerable quantity of leaves, because few or none of them are lost amongst the litter, besides that the operation is by this means sooner brought to a conclusion, and the worms always kept in high health and appetite by it. Upon these occasions let it be a fixed rule to feed them at night immediately before going to bed, and as early as you possibly can in the morning.

There is another particular to which it is proper to pay attention, and that is, that, the moment a basket of worms is cleared from the litter, the litter should be instantly carried out of the room, and along with it all the dead worms you can find, in order to prevent, as far as you can, any bad smell from taking place in the room, which is always hurtful to the worms, nothing conduced more to their health than cleanliness and preserving always good air in the room.

During the four or five days which precede the mounting, the worms eat with the most voracious appetite, and in that period consume an incredible quantity of leaves; so that the supplying them with fresh leaves, and the clearing away of the litter, become at this time a most laborious, incessant, and fatiguing work for those who attend them. You will know when the worms are ripe by observing them with attention when you give them fresh leaves. Those that are ripe, in-

stead of eating, avoid the fresh leaves, and run over them as fast as they can ; and you will observe them wandering about on the sides or rim of the basket. You will also know it by looking at them on the side opposite to the light, as you will then find them to be transparent, like a new laid egg, and of the color of the silk, which is also much the same with that of a new laid egg. When they are nearly ripe their bellies begin to grow transparent first of all; but they are never thoroughly ripe till their heads are transparent a'so. You must not be too hasty in putting up the brush-wood on the baskets on the stage for the worms to mount. This ought not to be done till you observe a good many of your worms offering to mount, because the brush-wood keeps the worms too close and warm, and exposes them to the danger of that disorder which the French call the *touff*, which is very fatal to the worms, and which does not seize them till they are just ready to mount. When they are perfectly full, and ready to mount, they are rendered feeble by too great heat, and the silk fairly chokes them, so that a great deal of fresh air becomes more particularly necessary for them at this time than at any other. For this reason it is even thought advisable not to put up your brush-wood until you have seen a cocoon fairly made upon the stage. At any rate you can have some of your large baskets (of which you should have an ample provision) ready dressed with brush-wood, into which you can from time to time, as you observe them, put such of your worms as you find are fully ripe for mounting. Besides, when you see a whole parcel ready to mount, you have only to take the basket which contains them out of its place, and put up one of those which are already dressed with the brush-wood, by which means you can put your worms directly into the little cabins prepared for them, which will render your work much easier than it would be otherwise, and make it less hurrying. The basket thus emptied of the worms should be instantly dressed with brush-wood, to be in readiness for the next parcel that shall be ready for mounting. Not a minute is to be lost when the worms are fully ripe, so that a number of these additional prepared baskets are of the utmost consequence at this time.

In preparing the little cabins for the worms you must make choice of such small brush-wood as is bushy at the tops, as already mentioned ; and, in arranging them, you must intermix the tops of them with each other, which will render them thicker in the heads ; but taking care always to leave little openings betwixt the twigs, so as the passage for the worms may not be stopped, which is attended with this advantage, that it affords a great many little places proper for the worms to form their cocoons in. When the heads of the brush-wood are too thin, the worms find themselves at a loss to fix themselves, and spend a great deal of their strength in ranging from branch to branch to find a proper place for them. In placing your brush-wood, you must order it so that the bottom parts of it shall stand as close to one another as possible, that the worms in groping about may every where find bushes to cling to. In using many kinds of

brush-wood, where the tops are very bushy, this will of course put the bottoms at a distance from each other. But these vacancies you must fill up with little twigs, for the purpose above mentioned ; to wit, that the worms may every where find branches to crawl on.

When you put up the brush-wood betwixt two baskets, that is, when there is one basket placed over the head of another, as is always the case on the stage, you have only to cut the branches of an equal length with one another, but about eight or nine inches longer than the distance betwixt the two baskets ; then, resting the bottom part upon the undermost, you bend the top in a curve downwards, either entirely to one side or to both, as the bushyness of the brush-wood will allow of it. The ranges are made across the breadth of the basket, at the distance of about eighteen or twenty inches from each other, so that you may easily put in your hand from one side to the other, to enable you to clean the intervals from time to time from the litter, as you shall find it necessary, which ought to be done at least once in twenty-four hours after the bushes are put up, and even twice if you can find time for it. The bushes are placed in such manner as to form with their heads little arches betwixt each row of the branches. By placing the bushes as above, they stand erect and firm, because they press equally upon the undermost as well as on the upper basket.

When the worms are mounted on the brush-wood, care must be taken not to suffer anybody to disturb them by handling or touching the brush-wood ; because, when they begin to work, their first operation is to fix so many threads of silk to different parts of the branches, which threads are to serve to support and hold up their cocoons in their proper poise. If any one of these silk threads is broken, by handling the branches, the worm finds, when he comes to work in the cocoon, that by the loss of that thread the cocoon has lost its poise, by which means, as it does not remain steady, he cannot work with advantage, so as to finish his cocoon properly. Disappointed by this means of continuing his work, he pierces the cocoon, quits it altogether, and throws out his silk at random wherever he goes, by which means his silk is wholly lost, as is the worm also, as he finds no place to lodge in with propriety, in order to prepare for his last change of state, when he is to come out a butterfly. Some of the threads of silk, which it has been already said the worm attaches to the different branches, upon his first beginning to work, are likewise sometimes broken by another worm working in his neighbourhood, which is attended with the fatal consequences above mentioned, though this last is an accident which happens but very seldom. Such of your worms as you find loiter below, without mounting, notwithstanding they are ripe, you must be careful from time to time to place upon the brush-wood, which is ranged at the two ends and along the sides of the stage. There are always some of the worms which are lazy, or have not strength enough to mount on the branches, which however are strong enough to make good cocoons when they are placed where

they can make them without the fatigue of mounting the brush-wood. Those which are so unlucky as to tumble from the brush-wood should also be placed with the other weak worms, because the fall generally diminishes their strength greatly; and those which you then place upon the brush-wood should be covered over with a piece of paper, to which they attach the threads of silk to keep their cocoons steady. You may also place some of the weak worms in papers, made up in the form of a cone or sugar-loaf, in which they will make their cocoons extremely well.

Great attention must also be paid to visit carefully from time to time all the different cabins, in order to remove immediately all diseased and dead worms; because the last, if left, will presently stink, and occasion a bad smell in the room, which would particularly annoy the worms which are at work in making their cocoons in the same cabin; and the diseased ones would infect the others which are sound.

When it is observed that a great proportion of the worms of the same basket are ripe, and that they are wandering about in quest of the brush-wood, the common practice has been to place the whole worms of that basket at once into the cabins for mounting. But this practice is attended with no small degree of inconvenience and danger, because it is impossible to manage your worms in such a manner that the contents of a whole basket shall all of them be ready to mount at the same instant. The consequence then is, that those which are ripe mount directly, and those which are not ripe remain in the cabins, and must have food given to them till such time as they are ready to mount in their turns, during which time the litter must be changed frequently to prevent corruption: but, what is worst of all, the worms which are mounted on the brush-wood, before beginning to shut themselves up entirely in their cocoons, discharge a quantity of liquid matter, which falls upon the worms below in the cabins, and wets and dirties them prodigiously; and that glutinous liquor, drying and hardening upon their skins, prevents their perspiration, and deprives them of that pliancy and agility which are so requisite to enable them to mount, as well as to make their cocoons. The consequence often is that the worms thus wet with that glutinous liquor contract diseases and die, at the very instant they are ready to mount; and as these diseases are too often contagious, by the worms bursting, the contagion is spread over the rest, which become also infected, and so the whole which remained in the cabins are often entirely lost.

Some few people, who are more attentive, and are sensible of the dangerous consequences of the above method, follow a different practice. They have the patience to pick out the worms, one by one, from time to time as they observe them to be ripe, which they then place in the cabins, and which never fail to mount immediately, when they are properly chosen; that is, when the person who gathers them is a proper judge of their real point of maturity, which discovers itself by their bodies, but more particularly their heads being perfectly transparent, as before mentioned. The

other worms, which are not ripe, they leave in the basket, and give them their food in the usual manner, till they become ripe in their turns, when they are constantly gathered up from time to time, and put into the cabins as they come to maturity. By this means you change them with ease, and they are safe against being wet with that glutinous liquor above mentioned, which from repeated experience has been found to have such pernicious and destructive consequences.

In putting the ripe worms into the cabins, take care to place them first of all in the middle of the cabins, that the middle may be well furnished with worms before you place any at the sides. Should you begin first with the sides, or outward ends of the cabins, you will find it extremely difficult to supply the middle of the cabins with worms, without disturbing and even destroying some of those which are mounting on the sides, in reaching in with your hand towards the middle.

The cocoons should be allowed to remain upon the brush-wood for six or seven days after the last of the worms of that particular parcel are mounted. After the cocoons are taken down they should be assorted according to their colors setting apart all the weak cocoons, and such as are double. Those of each color which have a shine upon their surface, and thence called satiny, should also be put by themselves, as they form the second sort of silk. The double cocoons form the coarsest silk of the whole. All the floss, or loose silk, which is round the outside of the cocoons, must be carefully taken off; because the better the cocoons are cleared from that outer silk the better they play in the basin, and of course the better the silk will wind off.

In clearing off the floss silk from the cocoons, when taken down from the branches, it is customary to make choice of those which are judged to be the best for seed, which are put aside by themselves, and afterwards from the whole of those to pick out in pairs such as are judged best for the purpose; taking care in this last choice to pick out an equal number of males and females, as far as one can judge of the different sexes by the cocoons. In doing this care must be taken to keep the cocoons of the same day's mounting always separate by themselves, that the butterflies may pierce the cocoons at the same time. If the good cocoons taken from the whole are all first mixed together, and from this general heap the cocoons are afterwards picked out in pairs for breeding, the consequence will be that there will be set aside the cocoons of worms that have mounted the brush-wood upon different days, which of course will have the effect that the butterflies will pierce the cocoons unequally; that is, not on the same day, but at times distant from each other; so that there will not be an equal number of males and females produced at the same time, which must occasion the loss of a great many of the butterflies, and consequently the quantity of eggs or seed will fall short of what was intended; which shows the necessity of precision in keeping the cocoons of each day apart. When you happen to have more females than males you must employ the

males of the preceding day a second time, that you may not lose your supernumerary females. But this is only to be done upon an urgent case of this kind; because it is greatly preferable to cause the males to serve only once if you can calculate so as to have always an equal number of both sexes for copulation. The double cocoons are to be distinguished by being much thicker than the others, generally broad, and not quite round.

In taking the cocoons off the brush-wood pick them off carefully, especially if there are any dead worms amongst them, which presently corrupt; because such of the cocoons as touch these dead worms are spoiled by them, as they contract by that touch a gluiness from the dead worms, which hinders the silk from winding off properly from the cocoon. The best manner to know the good from the bad cocoons is to press them at the two ends with your fingers. If they resist well that pressure, and appear hard and firm betwixt your fingers, the cocoons are certainly good. Though they appear firm, upon pressing their sides with your fingers, they may still not be entirely good, the pressure at the two ends being of all others the best manner of knowing the good ones.

After the cocoons are taken down from the brush-wood, such of them as are intended for seed must, with the utmost care, be cleaned from all the floss or loose sick which is about them; which, if allowed to remain, would greatly hinder the butterfly from getting out of his cell; after which, with a needle and thread, you must thread the cocoons by the middle, like a string of beads. But in doing this you must take care not to hurt the insect in the cocoon with the needle. You are only to pierce just as much of the skin of the cocoon as is sufficient to attach it to the thread, and this is done at the middle of the cocoon, to leave the two ends of it free, as you cannot be certain at which of the ends the insect will pierce the cocoon. This being done, you hang up the cocoons against the wall of the room by a nail, until such time as the butterflies come out.

When putting the cocoons upon the thread, in order to prepare them for breeding, be at the pains to place a male and female cocoon alternately upon the thread, that they may be near each other for copulation when they come to pierce the cocoons; and, when the butterflies come out, you place them upon a piece of clean woollen cloth, that is perfectly smooth, having no nap or pile upon it, which may be hung upon the back of a chair. The male is easily to be distinguished from the female by his body being more slender, and by fluttering his wings oftener and with a great deal more force than the female. The female, after copulation, will proceed to lay her eggs upon the cloth, to which they will closely adhere; and upon which you let the eggs remain till about a month before the usual time for hatching, when they are to be taken from the cloth, which is generally done by means of a thin piece of copper coin, which in France passes for a penny (*un sol marqué*), and which is found perfectly to answer the purpose. The cloth upon which the eggs are laid is folded up lightly and

kept till the proper season in a drawer or closet in a dry room, but not too hot. Every female butterfly is calculated to produce from 300 to 400 eggs. The reason for recommending the eggs to be taken off the cloth, about a month before the usual time of hatching, is this, that it can then be done without the smallest injury to the eggs, which at that time are perfectly hard and firm; but, if delayed till the time of hatching, the case becomes greatly altered, because the eggs gradually soften by the approach of the spring, so that they cannot then be taken from the cloth without the evident risk of destroying a great part of them.

Was it possible to wind off the silk from the other cocoons before the insect naturally pierces them, that is the best time for doing it, because the silk at that time winds off with much greater ease than afterwards. But, as that is found to be impossible, two methods have been pursued to destroy the insect in the cocoon, that they may wind off the silk at leisure and with full convenience. The first method, which was followed in France for that purpose, was to destroy them by placing the cocoons in baskets in a baker's oven; but, if the oven happened to be a little hotter than was proper, the silk was by that means scorched and often very much hurt by it. They therefore tried to kill the insect by the steam of boiling water, which could not at all hurt the silk, and they succeeded; so that the placing them in the oven is now wholly laid aside. The killing of the insect by the steam of boiling water is performed in the following manner:—They build a little furnace of brick of a kind of oval form, the ground part of which is for holding the wood or charcoal which they use upon this occasion; and, to make the fire burn properly, they have a little iron grate in the furnace, upon which they place the wood or charcoal; and over that, at a little distance, they place a little copper cauldron, which they fill with water, and make it boil by means of the fire underneath. Above this cauldron they have another iron grate, upon which they place the cocoons, in a little open basket composed of twigs, which is made pretty open between the twigs, to let the steam and heat of the boiling water have the easier access to the cocoons. To this cauldron, and the grate above it for holding the basket with the cocoons, you have access by a little door which opens above the entrance for the fire. The furnace is arched over the top with bricks, that, when the door above mentioned is shut, the steam may be retained within, which, in the space of eight minutes, is found effectually to kill the insects within the cocoons. The basket is then taken out and put aside, to let the cocoons dry, as, upon coming out of the furnace, they will be all of them wet with the steam; and they then place another basket in the furnace with more cocoons, taking care so to keep up the fire as to have the water in the cauldron always boiling. Charcoal is preferable to wood for fuel, upon this occasion, because it has no smoke. The smoke of wood spoils the color of the silk, and diminishes its lustre. The smoke of pit coal would be still worse.

Here it is proper to add that after the insects

have been killed by the steam, as above mentioned, care must be taken to stir about and move the cocoons regularly, at least once a day. If this is neglected, the insects will corrupt, and breed worms in the cocoons, which will destroy the silk. After the cocoons are taken out of the furnace, and dried a little, as before directed, they should be wrapped up in a good thick woollen blanket, to keep in all the hot steam, and to prevent all access to the exterior air. This is done with a view to stifle any of the insects which may happen to be yet alive, and which, if immediately exposed too much to the open air, might revive and recover their strength. They are left covered up in that manner with the blanket for five or six hours together; after which they are to be taken out of the basket, and spread out upon a table, and are afterwards to be stirred and moved about regularly every day, as directed above. And you then assort the cocoons according to their different colors, of which they have three sorts in France; namely, the white, the yellow, and those of a greenish color.

When the insects are once killed, the sooner you wind off the silk from the cocoons the better; because it can then be done more easily than after they have been kept some time; upon which account they always wind off the silk as fast as they possibly can; and it is done in the following manner:—They build a little copper cauldron into a small furnace of brick, with a fire-place under it, as in the other furnace already described, exactly in the same manner as we do in Britain at the sides of our rivers, for the washing of linen at our bleach fields; at the end of which they have a large reel, which turns round with the hand, and by a foot-board, and two or three little pieces of iron at proper distances, with eyes to them, by which to conduct the threads to the reel. The cauldron above mentioned they fill with water, and keep it always boiling with a fire of wood or charcoal; the last, however, being preferable, on account of its being free from smoke. They then put from twenty to thirty cocoons at once into the boiling water, and with a small brush of little twigs (of heath for example) they keep stirring the cocoons about. The heat of the boiling water dissolves the gum that is naturally about the silk, upon which, as the cocoons are continually touched and tossed from side to side amongst the water by the little brush, the ends of the silk attach themselves to the brush. When the woman who manages the brush perceives that she has got hold of the ends of the silk by it, she takes hold of the silk thread with her hand, puts aside the brush, and pulls the silk towards her, which disengages itself with ease from the cocoon; and this she continues to do till she has got away all the floss or outside silk of the cocoons. When she observes she has come to the fine silk, she breaks off and separates the coarse from it, which coarse silk she puts aside. She then applies her brush again till she has got hold of the end of the fine silk, all of which she sets apart, every fine thread by itself, by fixing it to a piece of wood kept near to the furnace for that purpose, till she has arranged the whole, or at least the greatest part, in this manner, which

by that means are in readiness to be thrown in to form the thread of silk which is to be wound off. This done she puts together the threads of as many of the cocoons as she inclines, according as she wants to make the thread fine or coarse. These she joins together; and, after having put the silk through one of the eyes of two of the pieces of iron which are placed for conducting the thread to the reel, she fixes the silk thread to the reel; upon which another woman, who attends to manage the reel, begins to turn it about with her hand, and keeps it in motion by applying her foot to the foot-board, and by this means winds off the silk from the cocoons, which is done with great swiftness.

As soon as one or more of the cocoons are exhausted, the woman who manages the cocoons in the cauldron, or basin, supplies their places from time to time with others; taking care while these are winding off to prepare others for keeping up a continual supply, and taking care also to observe that the silk winds off regularly from all the cocoons she puts in play together. As she is obliged to have her fingers almost every other instant amongst the boiling water, in order to manage the cocoons properly, she has a basin of cold water at hand, into which she dips her fingers alternately with the other, to prevent scalding them. But, in spite of her best care, a woman who works any time at this management finds her fingers at last so affected, by the influence of the boiling water, that they are for some time in such a state she has scarcely any feeling with them: but this afterwards goes off gradually. Here it must be observed that, in forming the brush before-mentioned, great care must be taken to have the points of it exceedingly small; because, if the points are large and coarse, the silk will not take up fine from the cocoons, but will rise off thick and clotty, which will prevent its winding off properly upon the reel.

The winding off the silk is always performed in the open air, generally in some garden, to prevent any accident from the fire, and more particularly to prevent any bad effects from the bad smell of the dead worms, which stink prodigiously. For these reasons this work is not suffered to be performed in any large town, but must always be done without the walls. When the day's work is over they make a fire of brush-wood, into which they throw all the dead insects, which are taken from the bottoms of the cocoons opened with a pair of scissors for that purpose, and burn them together, in order to prevent any bad consequences from their stench and smell. This is done every night regularly before the work-people retire for the evening. As the manufacturers of the silk, and merchants who want to sell it, buy up large quantities of the cocoons, some of these people will have from ten to twenty of these little furnaces going at a time in the same garden, and even sometimes more. As the whole of the silk cannot be entirely got off by the reel, what remains upon the dead insect is put aside with the coarse part of the silk, which is taken from the cocoons in the beginning, till you meet with the fine thread which is proper for the reel. The dimensions of the stove and basin made use of at Montauban are described above, are as follows:

Height of the stove from the ground, twenty-two inches and a-quarter. Length of the stove twenty-nine inches and a-half. Breadth of the stove twenty-four inches. Height of the iron bars for supporting the charcoal from the ground, for holding the fire, twelve inches and a quarter. Width of the door, or opening, at the bottom of the stove for taking out the ashes by, and for giving air to the fire, nine inches and a quarter. Width of the door, or opening, at which you put in the charcoal for supporting the fire, seven inches and a half. Length of the oval copper basin, which is built in on the top of the stove, for containing the hot water, in which the cocoons are put when they wind off the silk, twenty inches and three-quarters. Width of that basin sixteen inches and a half. Depth of the basin three inches and three-quarters. Breadth of the rim of the basin one inch and a quarter.

Spring water or rain water, as being soft, is the only proper water to be used in the basin. Draw-well water is altogether improper for this purpose, because it is hard, and does not properly dissolve the gum which is naturally upon the silk.

The water in the basin must be wholly changed twice a day; it is filled in the morning before setting to work, and the second time immediately before the people go to dinner, as it requires some time to make it boil.

When you first put the cocoons into the hot water, if the silk rises thick upon the brush, it is a proof that the water is too hot. If you cannot catch the threads of silk with the brush, it is a sign that the water is too cold.

When the cocoons are in play, if they rise often to the little iron conductors, it is a proof that the water is too hot. If the cocoons will not follow the thread, it is a sign that the water is too cold. By attending to these observations, you can easily manage so as to give that degree of heat to the water that is proper for the cocoons.

If there should happen to be any sand amongst the water in the basin, the heat makes it rise to the surface, where it fixes itself upon the cocoons. This is easily known, because, where there is any sand upon the cocoons, it makes the thread break, as if cut with a knife. For this reason the utmost care must be taken to guard against it, by cleaning the basin with the greatest attention. The fear of having sand is one of the reasons for changing the water of the basin at mid-day, and even oftener, if found to be necessary. When they find that there is a little sand, and that they wish to avoid changing the water, on account of the loss of time which that operation requires, as the water must be boiling before you can go on with the winding; in this last case, they cover the face of the brush all over with a parcel of the coarse silk, which is laid aside, and then put the face of the brush into the water, making it reach the bottom of the basin, along which you draw the brush gently, to catch hold of the sand with the coarse silk, to which it will immediately cling when it comes in contact with it. You then drag the brush gently up the side of the basin, and thus bring out the sand along with it. This operation, several times repeated,

cleans your basin of the sand, without your being put to the trouble and loss of time in changing the water.

Take care to keep up your fire under the basin in such a manner as to secure having the water always of the same degree of heat, and to throw in your addition of cold water by little and little at a time, so as it may make as little odds as possible in the degree of heat. When you throw in too much cold water at a time, so as to alter the requisite degree of heat, the silk of the cocoons which are in the basin at that time, loses its color, and grows perfectly pale; which silk, so rendered pale, it is said, will not take any dye properly, which by that means diminishes the value of your silk.

In beating the cocoons in the basin, with the brush, you must carry your hand as lightly as possible, so as just to touch the cocoons slightly. If you beat too hard, the threads of silk, in place of coming off singly, cling together in lumps, which, as it prevents its winding off, occasions the loss of the silk, as it will then only answer as waste silk. When you take the fine threads to throw them to that which is winding off, they must not overlap your finger more than an inch; if too long, they will not join well, but hang down and occasion a lump, which causes the thread to break, as it is then too large to pass through the eye of the little iron conductor.

In winding off the silk you must be attentive to keep the thread wet, to make it slip along the more easily towards the reel. And, when the wheel has remained any time idle, you must also wet all the thread betwixt the basin and two pieces of iron, which makes the thread run the more easily.

Be attentive also from time to time to wet with water the cord, and the little wooden wheel, which moves the wooden regulator, in order to make it act properly. If this is neglected, the cord, by being dry, will not turn the regulator as it ought, by which means the silk will be placed unequally upon the reel, which may have this farther disadvantage, to cause the silk threads upon the reel to cling and stick to each other, by having been brought into contact before the first threads have had time to dry. For that wooden regulator is calculated to place the threads in such a manner upon the wheel as to make them touch one another only obliquely, and in as few places as possible at first, that the silk as it comes from the cocoons may have the time requisite to dry, before it comes to be fully in contact with that which follows. When the silk threads cling together, by being too soon brought into contact, the silk is rendered good for nothing.

The cocoons called satiny, from their resemblance to satin, require only that the water should be moderately hot in the basin. The same degree of heat that is necessary for the fine cocoons would entirely spoil the others, by making the silk come off thick, and what they call bourry. You find out the degree of heat necessary for these, by examining with care in what manner the silk comes off from the first quantity of cocoons you put into the basin; and, if you find it comes off thick, you must add cold water by

degrees, till you find the just proportion for them. They must not be allowed to remain long in the hot water, and there should only be a few of these cocoons put into the water at a time. If these circumstances are not attended to, the silk comes off thick, as already mentioned, which, in winding, makes the thread break at every moment, and not only greatly diminishes the quantity of your silk upon the reel, but also considerably hurts its quality, by rendering it coarser.

When once the reel has the quantity of silk upon it judged to be sufficient—the produce of about three pounds of cocoons, for example—you take it off, and put another reel in its place, that the work may not be interrupted. The silk ought to remain for six or eight hours, or even more, if you can allow it with your convenience, as it ought to be perfectly dry before it is taken from the reel.

When the cocoons which were first put into the basin are nearly finished, you must cause the wheel to be stopped; at which time, with a ladle full of holes, like a drainer, you take out the cocoons which were in play, each parcel on the opposite side. They are put into plates kept at the side of the furnace for that purpose; and are taken out of the basin for the following two reasons: first, that they may not be mixed with the new cocoons, which are put into the basin to be prepared for winding, as already mentioned; secondly, because if these cocoons, which are already in part wound off, were left in the boiling water till the new ones are prepared, it would have the effect to prevent the silk from winding off from the cocoons with that dispatch and propriety which are necessary in that operation.

As soon as you observe that the silk is wound off from the cocoon, you must take out the bottom of the cocoon containing the insect from the basin, and throw it aside; because, if left in the basin, it will spoil the water, and consequently destroy the color of the silk.

You must be at pains to keep an equal number of cocoons working at each end of the basin, in order to keep the thread of silk of an equal size. When you have fewer on one side than the other, the silk becomes smaller at that side, of course, which also has the constant effect to break the thread. In order to keep the thread at both sides of an equal size, you must throw in the cocoons, one by one, and never more than two at a time. If you throw in many together, for example, four or five at once, it throws the weight to that side, when the thread immediately breaks, because by that means the equilibrium is lost.

In putting the silk thread round the two little pieces of wire, for conducting it to the reel, fixed to the little wooden wheel, you must turn the thread round to the right-hand for the bit of wire placed on the right; and turn it round to the left hand, for the piece of wire placed on the left.

The quicker the motion of the wheel is, the better the silk winds off, and the better the ends join to the thread, which is, indeed, one of the great reasons that make it wind off well. One might be apt to imagine that the rapidity of the

motion might overstrain and break the thread, but from constant experience it has been found that the thread never once breaks from the rapidity of the motion; but, on the contrary, that the quicker the motion is the more advantageous it is for winding the silk.

When you have put the quantity of silk upon the reel which you think proper, you then pick and clean off all the loose silk with your fingers; after which you take a little handful of the coarse silk, and after washing it to make it thoroughly clean, and squeezing it, you must dip it in some cold clean water, with which, in the flat of your hand, you rub over the silk upon the reel, a great many different times, all round the reel; stroking up also the silk with the flat or palm of your hand. After which you then pour some clear cold water also upon the silk; and you then turn round the reel with all the velocity in your power, for about eight or ten minutes, in order to shake off all the water effectually; which done, you take off the reel, and put it in some airy place to dry; but you must not expose it to the sun, which would quite eat away and spoil the color. This is done to clean the silk effectually and to give it a gloss.

In preparing the double cocoons for winding off, they put more of them into the basin at once than of the finest kind. But, before putting them into the basin, they must be well cleaned from all the floss, or waste silk, which is on the outside of them, that they may play properly in the basin. The water also must be boiling hot; and as the silk they yield is of a coarser quality than the other, and has a good deal of the floss silk or bou upon it, the girl who turns the wheel takes the opportunity, while the other woman is preparing the cocoons in the basin for winding, to clean and pick off the loose silk from that which is already on the reel. In winding off the fine silk, there are always two hanks of silk put upon the reel at the same time. But, in winding off the silk from the double cocoons, they confine themselves to one hank only at a time upon the reel.

The next object which occurs is the method observed by the French, in the preparation of their floss, or waste silk, which they call filoselle; and which they do in the following manner:—all the cocoons which have been pierced by the butterflies being collected together, they add to these all the light cocoons, which they judge to be improper for winding off, after the insects have been cut out, as before-mentioned; and to these they also add all the bottoms of the cocoons which had been thrown aside from the basin, after winding off their silk.

Such of the floss silk as you wish should retain the yellow color, you put into a large copper kettle, and cause a person to tramp it with her bare feet, in the same manner as the women in some parts of Scotland tramp their linens when they are washing them. From time to time they turn the cocoons upside down with their hands and so go on tramping them again with their feet. This operation is continued for nearly two hours together, turning them, and giving them a little more fresh water from time to time, till it is found that the silk of the cocoons sepa-

rates properly, upon teding it out with your fingers : and as, in tramping with the feet, the edges of the heap of cocoons will very often escape the stroke of the foot, you turn the edges into the middle. When you find it properly separated, you carry it to the river ; put the cocoons into a clean cloth tied up, to prevent the silk from mixing together. You then pour fresh water upon them from time to time, till you find that the water runs off from the silk perfectly clear, without being tinged with any sort of color. When you find this to be the case, you spread out the silk to dry by the sun ; and, when it is thoroughly dry, the operation is completed. For the subsequent processes in the manufacture of silk see WEAVING.

SILL, *n. s.* Sax. *rýl*; Fr. *suel*. The timber or stone at the foot of the door.

The farmer's goose,  
Grown fat with corn, and sitting still,  
Can scarce get o'er the barn-door sill ;  
And hardly waddles forth. *Swift.*

SILLA, a town on the Niger of Park, which bounded his travels eastward. He gives no description of the place, which he had not spirits or health to survey ; but fills a page of his work with the reasons which determined him to proceed no farther. ‘When I arrived,’ says he, ‘I was suffered to remain till it was quite dark, under a tree, surrounded by hundreds of people. But their language was very different from the other parts of Bambarra : and I was informed that, in my progress eastward, the Bambarra tongue was but little understood, and that when I reached Jenne I should find that the majority of the inhabitants spoke a different language, called Jenne Kummo by the negroes, and Kalam Soudan by the Moors. With a great deal of entreaty the Dooty allowed me to come into his balloon to avoid the rain : but the place was very damp, and I had a smart paroxysm of fever during the night. Worn down by sickness, exhausted with hunger and fatigue, half naked, and without any article of value by which I might procure provisions, clothes, or lodgings, I began to reflect seriously on my situation. I was now convinced, by painful experience, that the obstacles to my farther progress were insurmountable. The tropical rains were already set in with all their violence ; the rice grounds and swamps were every where overflowed ; and, in a few days more, travelling of every kind, unless by water, would be completely obstructed. The cowries which remained of the king of Bambarra’s present were not sufficient to enable me to hire a canoe for any great distance ; and I had but little hopes of subsisting by charity in a country where the Moors have such influence. But, above all, I perceived that I was advancing more and more within the power of those merciless fanatics ; and, from my reception both at Sego and SANSANDING (see these articles), I was apprehensive that, in attempting to reach even Jenne (unless under the protection of some man of consequence amongst them, which I had no means of obtaining), I should sacrifice my life to no purpose ; for my discoveries would perish with me. The prospect either way was gloomy. In returning to the Gambia, a journey on foot of

many hundred miles presented itself to my contemplation, through regions and countries unknown. Nevertheless this seemed to be the only alternative ; for I saw inevitable destruction in attempting to proceed to the eastward. With this conviction on my mind, I hope my readers will acknowledge that I did right in going no farther. I had made every effort to execute my mission, in its fullest extent, which prudence could justify. Had there been the most distant prospect of a successful determination, neither the unavoidable hardships of the journey, nor the dangers of a second captivity, should have forced me to desist. This, however, necessity compelled me to do ; and it affords me inexpressible satisfaction that my honorable employers have been pleased, since my return, to express their full approbation of my conduct.’ He must be a very unreasonable man, indeed, who could on this point think differently from Mr. Park’s employers. Long, 1° 24' W., lat. 14° 48' N.

SIL/LABUB, *n. s.* Minshey thinks this word is corrupted from swilling bubbles. Junius omits it. Henshaw, whom Skinner follows, deduces it from the Dutch *sullen*, a pipe, and *buyc*, a paunch ; because sillabubs are commonly drunk through a spout, out of a jug with a large belly. It seems more probably derived from *esil*, in old English, vinegar : *esil a bouc*, vinegar for the mouth, vinegar made pleasant.—Johnson. Mr. Thomson says from Belg. *azil bub*, acid drink. Curds made by milking upon vinegar

Joan takes her neat rubbed pail, and now  
She trips to milk the sand-red cow ;  
Where, for some sturdy foot-ball swain,  
Joan strokes a *syllabub* or twain. *Wotton.*

A feast,

By some rich farmer's wife and sister drest,  
Might be resembled to a sick man's dream,  
Where all ideas huddling run so fast,  
That *syllabubs* come first, and soups the last. *King*

SILLAH-MEW, a large town in the Birman empire, situated on the east side of the Irrawaddy. Lat. 20° 50' N., long. 94° 30' E. This large town is remarkable for its manufactures of silk, the raw material for which is procured from the province of Yunan in China. The colors are bright and beautiful, but do not appear durable ; the texture is close and strong. It is said to wear much longer than any China or Hindostany fabric ; but the price is proportionally high. Sillah-mew is a handsome town, shaded by wide spreading trees, and embellished with several temples. The soil is in general poor ; but some of the fields are regularly fenced, and there are numerous herds of cattle in the neighbourhood.

SILLIMANITE, in mineralogy, is a new mineral from Saybrook, Connecticut. Color dark gray, passing into olive brown. It is harder than the quartz in which it occurs, and is crystallised in rhomboidal prisms, having angles of 106° 30' and 73° 10' ; the inclination of the base to the axis of the prism being about 113°. The sides and angles of the crystals are frequently rounded. In hardness it exceeds quartz ; and, in some specimens, topaz. Translucent in small fragments. Brittle. Fracture in the longer diagonal lamellar, brilliant. Cross fracture uneven and splintery. Specific gravity 3.41. Infusible at the blow-

pipe even with borax. Acids have no action on it. Its constituents are,

Silica . . . . .	42·666
Alumina . . . . .	54·111
Oxide of iron . . . . .	1·999
Water . . . . .	0·510
Loss . . . . .	0·714
	100·000

SILLON, in fortification, an elevation of earth made in the middle of the moat to fortify it when too broad. It is more usually called the envelope.

SILLY, *adj.* Germ. *selig*.—Skinner.

SILLY, *adv.* Harmless; innocent; inof-

SILLINESS, *n. s.* Sensitive; plain; artless; foolish: the adverb and noun substantive corresponding.

After long storms,

In dread of death and dangerous dismay,  
With which my silly bark was tossed sore,  
I do at length deservy the happy shore. *Spenser.*

I wonder much what thou and I

Did till we loved? were we not weaned till then,  
But sucked on childish pleasures silly?

Or slumbered we in the seven sleepers den? *Donne.*

Perhaps their loves, or else their sheep,

Was that did their silly thoughts so busy keep.  
*Milton.*

The meanest subjects censure the action of the greatest prince; the silliest servants, of the wisest master. *Temple.*

Do, do, look silly, good colonel; 'tis a decent melancholy after an absolute defeat. *Dryden.*

We are caught as silly as the bird in the net. *L'Estrange.*

The silliness of the person does not derogate from the dignity of his character. *Id.*

I have no discontent at living here; besides what arises from a silly spirit of liberty, which I resolve to throw off. *Swift.*

Such parts of writings as are stupid or silly, false or mistaken, should become subjects of occasional criticism. *Watts.*

He is the companion of the silliest people in their most silly pleasure; he is ready for every impudent entertainment and diversion. *Law.*

SILLYHOW, *n. s.* Perhaps from *feliz*, happy, and *heofer*, the head. The membrane that covers the head of the fetus.

Great conceits are raised of the membranous covering called the sillyhow, sometimes found about the heads of children upon their birth. *Browne's Vulgar Errors.*

The SILLYHOW, in midwifery, is a portion of the chorion, which sometimes comes away with the child. In Scotland it is called the hally or holy how, and, without punning on the English name, many silly stories are still told by midwives of the good fortune that is to attend such lucky children, provided the membrane is carefully preserved by the mother, and the child never sees it!

SI-LONG, a town of China of the second rank, in the province of Quang-si, 1115 miles S. S. W. of Pekin.

SILPHA, carrion-beetle, in entomology, a genus of animals belonging to the class of insectæ, and to the order of coleopterae. The antennæ are clavated; the elava are perfoliated; the

elytra marginated; the head is prominent, and the thorax marginated. There are ninety-four species, of which only seven are natives of Britain and Ireland, viz. 1. *S. aquatica*, the water carrion beetle, is brown, with a green bronze tinge. There are four ribs on the thorax. On each shell there are ten striæ. The length is one-fifth of an inch. 2. *S. bipustulata* is black; the antennæ are long and small, and there are two red spots on the middle of each shell. The length is one-third of an inch. 3. *S. pulicaria* is black and oblong; the shells are abbreviated; the abdomen is rounded at the extremity; the thorax and shells are scarcely marginated; the length is one line. It is found frequently running on flowers. 4. *S. pustulata* is black and oblong; there are four brown spots on the shells; the length is one-fifth of an inch. It lives on trees. 5. *S. quadripunctata*. The head, antennæ, and legs black. Margin of the thorax and shells are of a pale yellow, with four black spots. The length half an inch. It is found in Caen wood, near Hampstead. 6. *S. sabulosa* is black; the antennæ are short and globular; there are five striae on each shell. The shells and wings are short. There are five joints on the two first feet, four on the rest. It lives in sand. 7. *S. vespollo*, the margin of the thorax broad. The shells are abbreviated, black, with two yellow belts. The thighs of the hind legs large, with a spine near the origin. Length nearly one inch. It infests dead bodies.

SILPHIUM, in ancient geography, a country of Libya.

SILPHIUM, in botany, bastard chrysanthemum, a genus of the polygamia necessaria order, and syngenesia class of plants; natural order fortieth, composite; the receptacle is paleaceous; the pappus has a two-horned margin, and the cal. is squarrose. There are eight species. 1. *S. asteriscum*; 2. *connatum*; 3. *laciniatum*; 4. *perfoliatum*; 5. *soldaginoides*; 6. *terebinthinum*; 7. *trifoliatum*; 8. *trilobatum*. They are all natives of North America, except the *soldaginoides*, and the last.

SILPIA, an ancient town of Spain.—Liv. 28.

SILT, *n. s.* Of uncertain origin. Mud; slime.

Several trees of oak and fir stand in firm earth below the moor near Thorney, in all probability covered by inundation, and the silt and moorish earth exaggerated upon them. *Hale.*

SILVAN, *adj.* Lat. *silva*. Woody; full of woods.

Betwixt two rows of rocks, a sylvan scene  
Appears above, and groves for ever green. *Dryden.*

SILVANUS, the companion and amanuensis of St. Paul. See SILOS.

SILVANUS, in the mythology, a rural deity, the son of Picus, king of Latium, and brother of Faunus, according to Virgil. Other mythologists make him the son of Mars; others of Valeria Tusculanaria, by her own father (Plutarch); others of an Italian shepherd by a she goat. He is indeed represented by painters as half a man, half a goat. Some say he reigned in Italy in the age of Evander. Be that as it may, this monster of a deity was worshipped in Italy as the patron of gardens, orchards, and woods, as his name im-

ples. He is generally ranked in Bacchus's train, with Faunus, Silenus, and the Satyrs.

SIL'VER, n.s., adj. & v.a.)	Sax. <i>reolpen</i> ;
SIL'VEBEATER, n. s.	Belg. <i>silver</i> ; Goth.
IL'VERLING,	<i>sifur</i> . A white and
SIL'VERLY, adv.	hard metal, next in
SIL'VERSMITH, n. s.	weight to gold. See
SIL'VERY, adj.	below. Any thing

of soft splendor: made of silver: the derivatives corresponding.

Put my *silver* cup in the sack's mouth.

*Gen. xliv. 2.*

A thousand vines, at a thousand *silverlings*, shall be for briars and thorns.

*Isaiah vii. 23.*

Demetrius, a *silversmith*, made shrines for Diana.

*Acts xix.*

The great in honour are not always wise,

Nor judgment under *silver* tresses lies.

*Sandys.*

From all the groves, which with the heavenly noises Of their sweet instruments were wont to sound,

And the hollow hills, from which their *silver* voices Were wont redoubled echoes to rebound,

Did now rebound with nought but rueful cries,

And yelling shrieks thrown up into the skies.

*Spenser.*

Old Salisbury, shame to thy *silver* hair,

Thou mad misleader of thy brain-sick son.

*Shakspeare.*

So sweet a kiss the golden sun gives not To those fresh morning drops upon the rose,

As thy eye-beams, when their fresh rays have smote The night of dew that on my cheeks down flows;

No shines the *silver* moon one half so bright, Through the transparent bosom of the deep,

As doth thy face through tears of mine give light.

*Id.*

It is my love that calls upon my name; How *silver* sweet sound lovers' tongues by night! Like softest musick to attending ears.

*Id.*

There be fools alive, I wis,

*Silvered* o'er, and so was this.

*Id.*

Let me wipe off this honourable dew

That *silverly* doth progress on the cheeks.

*Id.*

The splendour of *silver* is more pleasing to some eyes than that of gold; as in cloth of *silver*, and silvered rapiers.

*Bacon.*

*Silvering* will sully and canker more than gilding.

*Id.*

Hence had the huntress Dian her dread bow, Fair *silver*-shafted queen for ever chaste.

*Milton.*

Others on *silver* lakes and rivers bathed

Their downy breast.

*Id.*

A gilder shewed me a ring *silvered* over with mercurial fumes, which he was then to restore to its native yellow.

*Boyle.*

*Silverbeaters* choose the finest coin, as that which is most extensive under the hammer.

*Id.*

A gritty stone, with small spangles of a white *silver* talc in it.

*Woodward on Fossils.*

Here, retired, the sinking billows sleep, And smiling calmness *silvered* o'er the deep.

*Pope.*

Pallas, piteous of her plaintive cries,

In slumber closed her *silver*-streaming eyes.

*Id.*

The *silver*-shafted goddess of the place.

*Id. Odyssey.*

Of all the enamelled race whose *silver* wing Waves to the tepid zephyrs of the spring,

Once brightest shined this child of heat and air.

*Dunciad.*

**SILVER**, as well as gold, was long distinguished as one of the perfect metals, but all distinctions between perfect and imperfect metals, as well as between metals and semi-metals, are now laid

aside by modern chemists as unnecessary and improper. See METALLURGY.

Silver is found in various parts of the world, particularly in Peru and Mexico; in Saxony, Bohemia, Suabia, and Hungary; in Norway, Sweden, Russia, and Siberia. This noble metal occurs in a metallic state; also in that of an alloy; of a sulphuret, of a salt, and in that of an oxide. A considerable quantity of silver has also been obtained from some of the lead mines in Great Britain and Ireland.

Silver is a heavy, sonorous, brilliant, white metal, without either taste or smell; it is only moderately hard, but exceedingly ductile, and of great malleability and tenacity. It possesses these latter properties in so great a degree that it may be beaten into leaves much thinner than any paper, or drawn out into wire as fine as a hair, without breaking. Under certain circumstances it is capable of combustion. It melts when heated to about 1000° of Fahrenheit, and on cooling crystallises in four-sided pyramids. Its specific gravity is 10.474. It forms alloys with many of the other metals.

Silver cannot be oxidised by atmospheric air, unless exposed to an intense heat; but the oxide of silver may be procured by dissolving the metal in an acid, and then precipitating it by lime-water or by an alkali. The brown oxide of silver is the only one that is known with certainty.

The nitrate of silver is best known; but in analysis the sulphate of silver is also a most useful test: many other salts of this metal may likewise be formed. The muriate and the carbonate of silver are both found native. Silver may also be combined with chlorine, with iodine, with phosphorus, and with sulphur.

Silver is used chiefly for ornamental work, for domestic utensils, and for current coin; but for these purposes it is generally alloyed with copper, without which it would not have sufficient hardness to sustain much wear.

Silver is the whitest of all metals, says Dr. Ure, considerably harder than gold, very ductile and malleable, but less malleable than gold; for the continuity of its parts begins to break when it is hammered out into leaves of about the hundred and sixty thousandth of an inch thick, which is more than one-third thicker than gold leaf; in this state it does not transmit the light. Its specific gravity is from 10.4 to 10.5. It ignites before melting, and requires a strong heat to fuse it. The heat of common furnaces is insufficient to oxidise it; but the heat of the most powerful burning lenses vitrifies a portion of it, and causes it to emit fumes; which, when received on a plate of gold, are found to be silver in a metallic state. It has likewise been partly oxidised by twenty successive exposures to the heat of the porcelain furnace at Sevres. By passing a strong electric shock through a silver wire, it may be converted into a black oxide; and by a powerful galvanic battery silver leaf may be made to burn with a beautiful green light. Lavoisier oxidised it by the blowpipe and oxygen gas; and a fine silver wire burns in the kindled united stream of oxygen and hydrogen gases. The air alters it very little, though

it is disposed to obtain a thin purple or black coating from the sulphurous vapors which are emitted from animal substances, drains, or putrefying matters. This coating, after a long series of years, has been observed to scale off from images of silver exposed in churches; and was found, on examination, to consist of silver united with sulphur. There seems to be only one oxide of silver, which is formed either by intense ignition in an open vessel, when an olive-colored glass is obtained, or by adding a solution of caustic barytes to one of nitrate of silver, and heating the precipitate to dull redness. Sir H. Davy found that 100 of silver combine with 7·3 of oxygen in the above oxide; and, if we suppose it to consist of a prime equivalent of each constituent, we shall have 13·7 for the prime of silver. Silver leaf burned by a voltaic battery affords the same olive-colored oxide.

The prime equivalent of silver seems to be 13·75, or 110 on the hydrogen scale.

Silver combines with chlorine, when the metal is heated in contact with the gas. This chloride is, however, usually prepared by adding muriatic acid, or a muriate, to nitrate of silver. It has been long known by the name of luna-cornea or horn-silver, because, though a white powder, as it falls down from the nitrate solution, it fuses at a moderate heat, and forms a horny-looking substance when it cools. It consists of 13·75 silver + 4·5 chlorine.

The sulphuret of silver is a brittle substance, of a black color and metallic lustre. It is formed by heating to redness thin plates of silver stratified with sulphur. It consists of 13·75 silver + 2 sulphur. Fulminating silver is formed by pouring lime water into the pure nitrate, and filtering, washing the precipitate, and then digesting on it liquid ammonia in a little open capsule. In twelve hours the ammonia must be cautiously decanted from the black powder, which is to be dried in minute portions, and with extreme circumspection, on bits of filtering paper or card. If struck, in even its moist state, with a hard body, it explodes; and if in any quantity, when dry, the fulmination is tremendous. The decanted ammonia, on being gently heated, effervesces, from disengagement of azote, and small crystals appear in it when it cools. These possess a still more formidable power of detonation, and can scarcely bear touching even under the liquid. It seems to be a compound either of oxide of silver and ammonia, or of the oxide and azote. The latter is probably its true constitution, like the explosive iodide and chloride. The sudden extrication of the condensed gas is the cause of the detonation.

Silver is soluble in the sulphuric acid when concentrated and boiling, and the metal in a state of division. The muriatic acid does not act upon it; but the nitric acid, if somewhat diluted, dissolves it with great rapidity, and with a plentiful disengagement of nitrous gas; which, during its extrication, gives a blue or green color to the acid, that entirely disappears if the silver made use of be pure; if it contain copper, the solution remains greenish; and, if the acid contain either sulphuric or muriatic

acid, these combine with a portion of the silver, and form scarcely soluble compounds, which fall to the bottom. If the silver contain gold, this metal separates in blackish-colored flocks. The nitric acid dissolves more than half its weight of silver; and the solution is very caustic, that is to say, it destroys and corrodes animal substances very powerfully.

The solution of silver, when fully saturated, deposits thin crystals as it cools, and also by evaporation. These are called lunar nitre, or nitrate of silver. A gentle heat is sufficient to fuse them, and drive off their water of crystallisation. In this situation the nitrate, or rather subnitrate (for the heat drives off part of the acid) is of a black color, may be cast into small sticks in a mould, and then forms the lapis infernalis, or lunar caustic used in surgery. A stronger heat decomposes nitrate of silver, the acid flying off, and the silver remaining pure. It is obvious that, for the purpose of forming the lunar caustic, it is not necessary to suffer the salt to crystallise, but that it may be made by evaporating the solution of silver at once to dryness; and as soon as the salt is fused, and ceases to boil, it may be poured out. The nitric acid driven off from nitrate of silver is decomposed, the products being oxygen and nitrogen.

The sulphate of silver, which is formed by pouring sulphuric acid into the nitric solution of silver, is sparingly soluble in water; and on this account forms crystals, which are so small that they compose a white powder. The muriatic acid precipitates from nitric acid the saline compound called luna-cornea, or horn-silver; which has been so distinguished, because, when melted and cooled, it forms a semitransparent and partly flexible mass, resembling horn. It is supposed that a preparation of this kind has given rise to the accounts of malleable glass. This effect takes place with aqua regia, which acts strongly on silver, but precipitates it in the form of muriate as fast as it is dissolved. If any salt with base of alkali, containing the muriatic acid, be added to the nitric solution of silver, the same effect takes place by double affinity; the alkaline base uniting with the nitric acid, and the silver falling down in combination with the muriatic acid.

Since the muriatic acid throws down only silver, lead, and mercury, and the latter of these two is not present in silver that has passed culleration, though a small quantity of copper may elude the scorification in that process, the silver which may be revived from its muriate is purer than can readily be obtained by any other means. When this salt is exposed to a low red heat, its chlorine is not expelled; and a greater heat causes the whole concrete either to rise in fumes, or to pass through the pores of the vessel. To reduce it, therefore, it is necessary that it should be triturated with its own weight of fixed alkali and a little water, and the whole afterwards exposed to heat in a crucible, the bottom of which is covered with soda; the mass of muriate of silver being likewise covered with the same substance. In this way the acid will be separated from the silver, which is reduced to its metallic state.

As the precipitate of muriate of silver is very perceptible, the nitric solution of silver is used as a test of the presence of muriatic acid in waters; for a drop of this solution poured into such waters will cause a very evident cloudiness. The solution of silver is also used by assayers to purify the nitric acid from any admixture of muriatic acid. In this state they call it precipitated aquafortis. M. Chenevix found that a chlorate of silver may be formed by passing a current of chlorine through water in which oxide of silver is suspended; or by digesting phosphate of silver with hyperoxymuriate of alumina. It requires only two parts of hot water for its solution, and this affords, on cooling, small white, opaque, rhomboidal crystals. It is likewise somewhat soluble in alcohol. Half a grain, mixed with half as much sulphur, and struck or rubbed, detonates with a loud report and a vivid flash.

Compounds of silver with other acids are best formed by precipitation from its solution in nitric acid; either by the acid itself, or by its alkaline salts. Phosphate of silver is a dense white precipitate, insoluble in water, but soluble in an excess of its acid. By heat it fuses into a greenish opaque glass. Carbonate of silver is a white insoluble powder, which is blackened by light. The fluate and borate are equally soluble. Distilled vinegar readily dissolves the oxide of silver, and the solution affords long white needles, easily crystallised. See *SATIS*.

The precipitates of silver, which are formed by the addition of alkalis or earths, are all reducible by mere heat, without the addition of any combustible substance. A detonating powder has been sold lately at Paris as an object of amusement. It is enclosed between the folds of a card cut in two lengthwise, the powder being placed at one end, and the other being notched, that it may be distinguished. If it be taken by the notched end, and the other be held over the flame of a candle, it soon detonates, with a sharp sound, and violent flame. The card is torn, and changed brown; and the part in contact with the composition is covered with a slight metallic coating of a grayish-white color.

This compound, which M. Descotils calls detonating silver, to distinguish it from the fulminating silver of M. Berthollet, may be made by dissolving silver in pure nitric acid, and pouring into the solution, while it is going on, a sufficient quantity of rectified alcohol; or by adding alcohol to a nitric solution of silver with considerable excess of acid. In the first case, the nitric acid into which the silver is put must be heated gently, till the solution commences, that is, till the first bubbles begin to appear. It is then to be removed from the fire, and a sufficient quantity of alcohol to be added immediately, to prevent the evolution of any nitrous vapours. The mixture of the two liquors occasions an extrication of heat; the effervescence quickly recommences, without any nitrous gas being disengaged; and it gradually increases, emitting at the same time a strong smell of nitric ether. In a short time the liquor becomes turbid, and a very heavy, white, crystalline powder falls down, which must be separated when it

ceases to increase, and washed several times with small quantities of water.

If a very acid solution of silver previously made be employed, it must be heated gently, and the alcohol then added. The heat excited by the mixture, which is to be made gradually, soon occasions a considerable ebullition, and the powder immediately precipitates. It would be superfluous to remind the chemist that the mixture of alcohol with hot nitric acid is liable to occasion accidents, and that it is consequently prudent to operate on small quantities. This powder has the following properties:—It is white and crystalline; but the size and lustre of the crystals are variable. Light alters it a little. Heat, a blow, or long continued friction, causes it to inflame with a brisk detonation. Pressure alone, if it be not very powerful, has no effect on it. It likewise detonates by the electric spark. It is slightly soluble in water. It has a very strong metallic taste. Concentrated sulphuric acid occasions it to take fire, and is thrown by it to a considerable distance. Dilute sulphuric acid appears to decompose it slowly.

*Process for separating silver from copper by Mr. Keir.*—Put the pieces of plated metal into an earthen glazed pan; pour upon them some acid liquor, which may be in the proportion of eight or ten pounds of sulphuric acid to one pound of nitre; stir them about, that the surfaces may be frequently exposed to fresh liquor, and assist the action by a gentle heat from  $100^{\circ}$  to  $200^{\circ}$  of Fahrenheit's scale. When the liquor is nearly saturated, the silver is to be precipitated from it by common salt, which forms a muriate of silver, easily reducible by melting it in a crucible with a sufficient quantity of potash; and lastly, by refining the melted silver, if necessary, with a little nitre thrown upon it. In this manner the silver will be obtained sufficiently pure, and the copper will remain unchanged. Otherwise, the silver may be precipitated in its metallic state, by adding to the solution of silver a few of the pieces of copper, and a sufficient quantity of water to enable the liquor to act upon the copper.

Mr. Andrew Thomson, of Banchory, has recommended the following method of purifying silver, which he observes is equally applicable to gold. The impure silver is to be flattened out to the thinness of a shilling, coiled up spirally, and put into a crucible, the bottom of which is covered with black oxide of manganese. More of this oxide is then to be added, till the silver is completely covered, and all the spaces between the coils filled. A cover is then to be luted on, with a small hole for the escape of the gas; and after it has been exposed to a heat sufficient to melt silver, for about a quarter of an hour, the whole of the alloy will be oxidised. The contents of this crucible are then to be poured into a larger, into which about three times as much powdered green glass has been previously put; a cover luted on as before, to prevent the access of any inflammable matter; and the crucible exposed to a heat sufficiently strong to melt the glass very fluid. On cooling and breaking the crucible, the silver will be found reduced at the bottom, and perfectly pure.

Sulphur combines very easily with silver, if thin plates, imbedded in it, be exposed to a heat sufficient to melt the sulphur. The sulphuret is of a deep violet color, approaching to black, with a degree of metallic lustre, opaque, brittle, and soft. It is more fusible than silver, and this in proportion to the quantity of sulphur combined with it. A strong heat expels part of the sulphur. Sulphureted hydrogen soon tarnishes the surface of polished silver, and forms on it a thin layer of sulphuret.

The alkaline sulphurets combine with it by heat, and form a compound soluble in water. Acids precipitate sulphuret of silver from this solution.

Phosphorus left in a nitric solution of silver becomes covered with the metal in a dentritic form. By boiling, this becomes first white, then a light black mass, and is ultimately converted into a light brown phosphuret. The best method of forming a phosphuret of silver is Pelletier's, which consists in mixing phosphoric acid and charcoal with the metal, and exposing the mixture to heat.

Most metallic substances precipitate silver in the metallic state from its solution. The assayers make use of copper to separate the silver from the nitric acid used in the process of parting.

The precipitation of silver by mercury is very slow, and produces a peculiar symmetrical arrangement, called the tree of Diana. In this, as in all precipitations, the peculiar form may be affected by a variety of concomitant circumstances; for which reason one process usually succeeds better than another. Make an amalgam, without heat, of four drachms of leaf silver with two drachms of mercury. Dissolve the amalgam in four ounces or a sufficient quantity of pure nitric acid of a moderate strength; dilute this solution in about a pound and a half of distilled water; agitate the mixture, and preserve it for use in a glass bottle with a ground stopper. When this preparation is to be used, the quantity of one ounce is put into a phial, and the size of a pea of amalgam of gold, or silver, as soft as butter, is to be added; after which the vessel must be left at rest. Soon afterwards, small filaments appear to issue out of the ball of amalgam, which quickly increase, and shoot out branches in the form of shrubs.

Silver unites with gold by fusion, and forms a pale alloy, as has been already mentioned in treating of that metal. With platina it forms a hard mixture, rather yellower than silver itself, and of difficult fusion. The two metals do not unite well. Silver melted with one-tenth part of crude platina, from which the ferruginous particles had been separated by a strong magnet, could not be rendered clear of scabrous parts, though it was repeatedly fused, poured out, and laminated between rollers. It was then fused, and suffered to cool in the crucible, but with no better success. After it had been formed, by rolling and hammering, into a spoon for blow-pipe experiments, it was exposed to a low red heat, and became rough and blistered over its whole surface. The quantities were 100 grains of silver, and ten grains of platina. Nitre was added during the fusions.

Silver very readily combines with mercury. A very sensible degree of heat is produced when silver leaf and mercury are kneaded together in the palm of the hand. With lead it forms a soft mass, less sonorous than pure silver. With copper it becomes harder and more sonorous, at the same time that it remains sufficiently ductile: this mixture is used in the British coinage. Twelve parts and one-third of silver, alloyed with one of copper, form the compound called standard silver. The mixture of silver and iron has been little examined. With tin it forms a compound, which, like that of gold with the same metal, has been said to be brittle, however small the proportion; though there is probably as little foundation for the assertion in the one case as in the other. With bismuth, arsenic, zinc, and antimony, it forms brittle compounds. It does not unite with nickel. The compound of silver and tungsten, in the proportion of two of the former to one of the latter, was extended under the hammer during a few strokes; but afterwards split in pieces. See IRON.

The uses of silver are well known: it is chiefly applied to the forming of various utensils for domestic use, and as the medium of exchange in money. Its disposition to assume a black color by tarnishing, and its softness, appear to be the chief objection to its use in the construction of graduated instruments for astronomical and other purposes, in which a good white metal would be a desirable acquisition. The nitrate of silver, besides its great use as a caustic, has been employed as a medicine, it is said with good success, in epileptic cases, in the dose of one-twentieth of a grain, gradually increased to one-eighth, three times a-day. Dr. Cappe gave it in a dose of one-fourth of a grain three times a-day, and afterwards four times, in what he supposed to be a case of angina pectoris, in a stout man of sixty, whom he cured. He took it for two or three months. Dr. Cappe imagines that it has the effect of increasing the nervous power, by which muscular action is excited.

The frequent employment in chemical researches of nitrate of silver as a re-agent for combined chlorine, occasions the production of a considerable quantity of the chloride (muriate) of silver, which is usually reconverted into metal by fusion with potash in a crucible. But, as much of the silver is lost in this way, it is better to expose the following mixture to the requisite heat:—

Chloride of silver . . . . .	100
Dry quicklime . . . . .	19·8
Powdered charcoal . . . . .	4·2

An easier method, however, is to put the metallic chloride into a pot of clean iron or zinc, to cover it with a small quantity of water, and to add a little sulphuric or muriatic acid. The reduction of the chloride of silver by the zinc or iron is an operation which it is curious to observe, especially with the chloride in mass (*lunacornæa*). It begins first at the points of contact, and speedily extends, in the form of ramifications, over its whole surface, and into its interior. Hence, in less than an hour, considerable pieces of horn-silver are entirely reduced. If the mass

operated on by considerable, the temperature rises, and accelerates the revivification. On the small scale, artificial heat may be applied.—*Ann. de Chimie, July 1820.*

**SILVERING.** There are various methods of giving a covering of silver or silvery aspect to the surfaces of bodies. The application of silver leaf is made in the same way as that of gold, for which see *GILDING*.

Copper may be silvered over by rubbing it with the following powder: two drachms of tartar, the same quantity of common salt, and half a drachm of alum, are mixed with fifteen or twenty grains of silver precipitated from nitric acid by copper. The surface of the copper becomes white when rubbed with this powder, which may afterwards be brushed off and polished with leather.

Saddlers and harness-makers cover their wares with tin for ordinary uses, but a cheap silvering is used for this purpose as follows: half an ounce of silver that has been precipitated from aquafortis by the addition of copper, common salt and muriate of ammonia of each two ounces, and one drachm of corrosive muriate of mercury, are triturated together, and made into a paste with water; with this, copper utensils of every kind, that have been previously boiled with tartar and alum, are rubbed, after which they are made red-hot, and then polished. The intention of this process appears to be little more than to apply the silver in a state of minute division to the clean surface of the copper, and afterwards to fix it there by fusion; and accordingly this silvering may be effected by using the argentine precipitate here mentioned, with borax or mercury, and causing it to adhere by fusion.

The dial-plates of clocks, the scales of barometers, and other similar articles, are silvered by rubbing upon them a mixture of muriate of silver, sea salt, and tartar, and afterward carefully washing off the saline matter with water. In this operation, the silver is precipitated from the muriatic acid, which unites with part of the coppery surface. It is not durable, but may be improved by heating the article, and repeating the operation till the covering seems sufficiently thick. The silvering of pins is effected by boiling them with tin filings and tartar.

Hollow mirrors or globes are silvered by an amalgam, consisting of one part by weight of bismuth, half a part of lead, the same quantity of pure tin, and two parts mercury. The solid metals are to be first fused together, and the mercury added when the mixture is almost cold. A very gentle heat is sufficient to fuse this amalgam. In this state it is poured into a clean glass globe intended to be silvered, by means of a paper funnel, which reaches to the bottom. At a certain temperature, it will stick to the glass, which by a proper motion may thus be silvered completely, and the superfluous amalgam poured out. The appearance of these toys is varied by using glass of different colors, such as yellow, blue, or green.

**SILVERUS** (St.), pope of Rome, was the son of pope Hormisdos, who had been married before he entered into orders. On the death of pope Agapetus I. he was placed in the pontifical

chair by Theodatus king of the Goths, A. D. 536; but this appointment was not considered as canonical. He was afterwards, however, duly elected. But the empress Theodora persecuted him violently, till she got him banished into Lycia. He died in the isle of Palmaria, in 538, according to Dr. Watkins, or 540, as Marcell says; and was sainted for his sufferings.

**SILVESTER I.** pope of Rome, succeeded pope Miltiades, A. D. 314. He sent deputies to the councils of Aries and of Nice. He died A. D. 335.

**SILVESTER II.** rose by his merit from obscurity to the highest dignities in the church. He was one of the most learned men of his age, being well versed in the mathematics and other sciences. In 992 he was made archbishop of Rheims; and on the death of Gregory V., in 999, was raised to the triple crown. He died in 1003.

**SILVIUM**, in ancient geography: 1. A town of Istria; 2. A town of Apulia, now called Gorgoglion.—*Plin. iii. c. 11.*

**SILVIUS**, or **SYLVIA** (*Aeneas*). See **PIUS II.**

**SILURES**, an ancient nation of South Britain, who inhabited South Wales.

**SILURES**, an ancient name of the Scilly Islands. See **SILLY**.

**SILURIS**, in ichthyology, a genus belonging to the order of pisces abdominales. The head is naked; the mouth set round with hairy filaments; the bronchiaæ have from four to fourteen rays; the ray of the pectoral fins, or the first dorsal one, is prickly, and dentated backwards. There are twenty-one species, most of them natives of the Indian and American seas. 1. *S. clarias* of Linnaeus, called scheilan by the Arabians, is mentioned by Hasselquist. If it pricks one with the bone of the breast fin, it is dangerous; and our author saw the cook of a Swedish merchant ship die of the poison communicated by the prick of one of these fish. 2. *S. electricus* is a most extraordinary species, described under the article **ELECTRICITY**.

**SIMAR**, n. s. Fr. *simarre*. A woman's robe.

The ladies dressed in rich *simars* were seen, Of Florence sattin, flowered with white and green.

*Dryden.*

**SIMBIRSK**, a town and government of European Russia, on the borders of Asia. It lies along both sides of the Wolga, between 52° and 57° of N. lat., having the government of Kasan on the north, and that of Saratov on the south. Its superficial extent is calculated at 30,000 square miles; its population at 850,000. The rivers are the Wolga and Sura, and the lakes are numerous. The majority profess the religion of the Greek church, but a number are Mahometans and Arminians.

**SIMBRIVIUS**, or **SIMBRUVIUS**, in ancient geography, a lake of Italy, in Latium, formed by the Anio. *Tac. 14, An. 22.*

**SIMENA**, a town of Lycia, near Chimæra.

**SIMEON**, Heb. שִׁמְעוֹן, i. e. Hearing, the second son of Jacob, by Leah, and the most wicked of all the twelve patriarchs. Besides his bloody combination with Levi, in the massacre of the Shechemites (see **LEVI** and **SHECHEM**) he is said by the rabbies to have been the person

who proposed to murder Joseph; and this seems the more probable from Joseph's singling him out, binding him, and detaining him as a prisoner and hostage, till the rest should return with Benjamin: Gen. xlvi. 24. He had six sons, one of whom, Obad, seems to have died without issue.

**SIMEON**, or the **SIMEONITES**, the descendants of the above patriarch, one of the twelve tribes of Israel. When they came out of Egypt, they amounted to 59,300 men fit to bear arms, under Shelumiel, their chief; but they never made any distinguished figure, either during the republic or under the monarchy. They appear in general to have been as deeply guilty, in the criminal affair of Peor, as Zimri their prince; and the 25,000 cut off in that affair had been mostly of this tribe; for at the enumeration, immediately after, their number was decreased to 22,000. See Num. xxv. and xxvi. 14, 15. This their recent wickedness appears to have been the reason why Moses omitted them in the farewell blessing which he pronounced upon all the other tribes: Deut. xxxiii. It is said that the narrow limits of their inheritance compelled them to become scribes, and disperse themselves among the other tribes, according to the curse denounced upon their father by Jacob.

**SIMEON**, a respectable old man of Jerusalem, who waited for the fulfilment of the prophecies respecting the coming of the Messiah, whom he had a divine intimation that he should live to see, and who bore public testimony to our Saviour in the temple in his infancy: Luke ii. 25—35. From his speech, or address of thanks to God, on that occasion, and particularly from his prophetic address to the mother of Jesus, he appears to have had much clearer views of the nature of the Messiah's kingdom than the most of his countrymen of that age. But these too, perhaps, he had by immediate revelation. Tradition says that Simeon was the son of the famous Hillel, president of the Jewish Sanhedrim, and that he taught the celebrated Gamaliel. See **HILLEL**.

**SIMEON OF DURHAM**, an English historian, the contemporary of William of Malmesbury, who took great pains in collecting the monuments of the history of England, especially in the north, after they had been scattered by the Danes. From these he composed a history of the kings of England, from A.D. 616 to 1130; with some smaller historical pieces. Simeon both studied and taught the sciences, and particularly the mathematics, at Oxford; and became precentor of the church at Durham, where he died. His history was continued by John, prior of Hexham, to A.D. 1156.

**SIMON STILITES**, or **STYLITES**, a native of Syria, an anchorite, the founder of a sect, and the inventor of a ridiculous discipline, practised by him and his followers, called Stilites, or Pillar Saints, in the fifth century. Simeon passed thirty-seven years of his useless life on the top of these pillars; the first of which was six cubits high; the second twelve; the third twenty-two; the fourth thirty-six; and the last forty cubits high.

**SIMETHIUS**, or **SYMITHIUS**, an ancient town

of Sicily, near a river so named; where Virgil says the gods Palici were born. See **PALICI**. Virg. *Aen.* ix. v. 584.

**SIMI**, or **SYMI**, an island in the Mediterranean, between Rhodes and the continent of Asia, six miles north of Rhodes. Long. 45° 19' E. of Ferro, lat. 36° 36' N.

**SIMIA**, the monkey, a genus of quadrupeds, belonging to the class of mammalia, and order of primates, in the Linnæan system, but by Mr. Pennant arranged under the digitated quadrupeds. According to the Linnæan system, the characteristics of this genus are these: There are four close set fore-teeth in each jaw; single tusks on each side in both jaws, which are longer than the rest, and somewhat remote from them. The grinders are obtuse, and the feet are formed like hands. Mr. Pennant gives the following generic description of the simia: There are four cutting teeth in each jaw, and two canine. Each of the feet is formed like a hand, generally with flat nails, and, except in one instance, has four fingers and a thumb. There are eyebrows both above and below. They are a numerous race; but almost all confined to the torrid zone. Mr. Kerr enumerates sixty-five species, and twenty varieties. They fill the woods of Africa from Senegal to the Cape, and thence to Ethiopia. They are found in all parts of India and its islands; in Cochin-China, in the south of China, and in Japan; one species is met with in Arabia; and they swarm in the forests of South America, from the isthmus of Darien as far as Paraguay. They are lively, agile, full of frolic, chatter and grimace. From the structure of their members, they have many actions in common with the human kind. Most of them are fierce and untameable; some are of a milder nature, and will show a degree of attachment; but in general they are endowed with mischievous propensities; and are filthy, obscene, lascivious, and thieving. They inhabit the woods, and live on trees; feeding on fruits, leaves, and insects. In general they are gregarious, going in vast companies: but the different species never mix with each other, always keeping apart, and in different quarters. They leap with vast activity from tree to tree, even when loaded with their young, which cling to them. They are the prey of leopards and others of the feline race; and of serpents, which pursue them to the summits of the trees, and swallow them entire. They are not carnivorous, but for mischief's sake will rob the nests of birds of the eggs and young. In the countries where they most abound, the sagacity of the feathered tribe is marvellously shown in their contrivances to fix the nest beyond the reach of these invaders. The simia being more numerous in their species than any other animals, and differing greatly in their appearances, it seemed necessary to methodise and subdivide the genus. Accordingly Mr. Ray first distributed them into three classes.

1. Simiæ, apes, such as want tails. 2. Cercopithei, monkeys, such as have tails. 3. Papiones, baboons, those with short tails; to distinguish them from the common monkeys, which have very long ones. The principal marks by which the species of this genus are distinguishable from each other are derived, 1st, from the tail, which is either

long, short, or altogether wanting; or is straight or prehensile; 2dly, from the buttocks, which are naked, and furnished with callosities, or are covered with hair; 3dly, from the nails, which are flat and rounded like those of man, or sharp-pointed like the claws of beasts in general; 4thly, from the presence or absence of a beard on the chin; and, 5thly, from the cheeks being provided with, or wanting, pouches in their under parts. For greater convenience, the species of this genus, which are very numerous, are arranged under five subordinate divisions, considered as distinct genera by some authors, and not without reason. Three of these subdivisions were adopted by Linnaeus; but Dr. Gmelin, following Buffon, has added other two, taken from the third division of his great precursor. These are the simia, papiones, cercopithecii, sapaui, and sagoines, which we proceed to describe in their alphabetical order:

I. S. apes have no tails. The visage is flat; the teeth, hands, fingers, feet, toes, and nails, resemble those of man, and they walk naturally erect. This division includes the simiae, or apes properly so called, which are not found in America.

II. S. cercopithecii, monkeys, have long tails, which are not prehensile; the under parts of their cheeks are furnished with pouches, in which they can keep their victuals; the partition between the nostrils is thin, and the apertures are, like those of man, placed in the under part of the nose; the buttocks are naked and provided with callosities. These animals, which are never found native in America, are the cercopithecii and *κυβσοι* of the ancients.

1. S. cercopithecus æthiops, the mangabey, or white-eyed monkey, has a long, black, naked, and dog-like face; the upper eye-lids of a pure white; ears black, and like the human: no canine teeth; hairs on the sides of the face, beneath the cheeks, longer than the rest; tail long; color of the whole body tawny and black; flat nails on the thumbs and fore fingers; blunt claws on the others; hands and feet black. One was shown in London some years ago, of place uncertain; that described by M. de Buffon came from Madagascar, was very good-natured, and went on all fours.

2. S. cercopithecus aygula, the egret, has a long face, and an upright sharp-pointed tuft of hair on the top of the head. The hair on the forehead is black: the tuft and the upper part of the body light-gray; the belly white: the eye-brows are large; the beard very small. They are the size of a small cat; inhabit Java; fawn on men, on their own species, and embrace each other. They play with dogs, if they have none of their own species with them. If they see a monkey of another kind, they greet him with a thousand grimaces. When a number of them sleep, they put their heads together. They make a continual noise during the night.

3. S. cercop. cephus, the moustache, has a beard on the cheeks; the crown of the head is yellowish: the feet are black, and the tip of the tail is of an ash color. Its tail is much longer than the body and head, being nineteen or twenty inches in length. The female menstruates.

4. S. cercop. cynocephalus, the dog-headed monkey, has no beard, and is of a yellow color; the muzzle is long; the tail long and straight, and the buttocks naked. It is a native of Africa.

5. S. cercop. cynomologus, the macaque of Buffon, or hare-lipped monkey of Pennant, has no beard; the nostrils are thick and divided; the tail is long and arched, and the buttocks are naked. He has cheek pouches, and callosities on the buttocks. His tail is from eighteen to twenty inches long. His head is large, his muzzle very thick, and his face naked, livid, and wrinkled. His ears are covered with hair. His body is short and squat, and his limbs thick and short. The hair on the superior parts of his body is of a greenish-ash color, and of a yellowish-gray on the breast and belly. He has a small crest of hair on the top of the head. He walks on four and sometimes on two feet. The length of his body, comprehending that of the head, is about eighteen or twenty inches. They are mild and tractable, but dirty.

6. S. cercop. cynosuros, the dog-tailed monkey, has a long tail and no beard; the face is long, with a sooty-colored forehead, and a whitish band over the eyes; the male parts are highly colored; the nails are convex. It is about the size of a middling dog; two feet high when erect. The species are deceitful, restless, and libidinous.—Kerr.

7. S. cercop. diana, the spotted monkey, has a long white beard: the color of the upper parts of the body reddish, as if they had been singed, marked with white specks; the belly and chin whitish; tail very long; is a species of a middle size. It inhabits Guinea and Congo, according to Marcgrave; the Congese call it exquima. M. de Buffon denies it to be of that country; but from the circumstance of the curl in its tail, in Marcgrave's figure, and the description of some voyagers, he supposes it to be a native of South America. Linnaeus describes his S. diana somewhat differently: he says it is of the size of a large cat; black spotted with white: hind part of the back ferruginous; face black; from the top of the nose is a white line passing over each eye to the ears, in an arched form; beard pointed, black above, white beneath, placed on a fleshy excrescence; breast and throat white; from the rump, cross the thighs, a white line; tail long, straight, and black; ears and feet of the same color; canine teeth, large.

8. S. cercop. faunus, the marlbruck, has a long tail, and is bearded: the tail is bushy at the extremity. It is a native of Bengal. This species has cheek-pouches, and callosities on the buttocks; the tail is nearly as long as the body and head; and it is a mistake of Clusius that it terminates in a tuft; the face is of a cinereous gray color, with a large muzzle, and large eyes, which have flesh-colored eye-lids, and a gray band cross the forehead instead of eye-brows; the ears are large, thin, and flesh-colored; the upper parts of the body are of a uniform yellowish brown color, and the lower of a yellowish gray: it walks on all fours, and is about a foot and a half from the muzzle to the extremity of the tail. The females menstruate.

9. S. cercop. fulvus, the tawny monkey, has

long tusks in the lower jaw: the visage is long and flesh-colored, with flesh-colored ears, and a flattish nose. Inhabits India. This is a very ill-natured animal, about the size of a cat: it was lately in the possession of a Mr. Brook, an animal merchant and exhibiter in London: the upper parts of the body are covered with a pale tawny colored fur, which is ash-colored at the roots; the hinder part of the back is orange-colored, the legs ash-colored, the belly white, and the tail shorter than the body.

10. *S. cercop. hamadryas*, the Tartarin, or dog-faced baboon of Pennant, with a long, thick, and strong nose, covered with a smooth red skin; ears pointed and hid in the hair; head great, and flat; hair on the head, and fore-part of the body as far as the waist, very long and shaggy; gray and olive brindled; the sides of the head very full, the hair on the limbs and hind part of the body very short; limbs strong and thick; hands and feet dusky; the nails on the fore feet flat; those on the hind like a dog's; buttocks very bare and covered with a skin of a bloody color; tail scarcely the length of the body, and carried generally erect. They inhabit the hottest parts of Africa and Asia; where they keep in vast troops, and are very fierce and dangerous. They rob gardens. They will run up trees when passengers go by, shake the boughs at them with great fury, and chatter very loud. They are excessively impudent, indecent, lascivious; most detestable animals in their manners as well as appearance. They range the woods in hundreds; which obliges the owners of the coffee plantations to be continually on their guard against their depredations. One of them was shown in London some years ago: it came from Mokha, in the province of Yeman, in Arabia Felix, in the Persian Gulph; and was about five feet high. It was very fierce and untameable; so strong as easily to master its keeper, a stout young man. Its inclinations to women appeared in the most violent manner. A footman, who brought a girl to see it, in order to tease the animal, kissed and hugged her: the beast, enraged at being so tantalised, caught hold of a quart pewter pot, which he threw with such force and so sure an aim, that, had not the man's hat and wig softened the blow, his skull must have been fractured; but he fortunately escaped with a common broken head.

11. *S. cercop. mona*, the monina of Buffon and Kerr, has a prominent, semilunar, whitish-gray arch, over each eye; and is gray bearded. This is the most common species of the monkeys, and agrees best with the climate of Europe: It has cheek-pouches and callosities on the buttocks; is about eighteen inches long from the muzzle to the rump; the tail is two feet; the head small and round; the face a bright tawny brown; the muzzle is thick and short; the cheeks are surrounded with a beard of white, yellow, and black hairs; on the head a mixture of yellow and black, with a gray band over the fore-head, and a black band from the eyes to the ears, shoulders, and arms: the hair on the body is reddish-black; the belly and inside of the thighs whitish; the outsides of the legs and feet are black; the tail grayish-brown with two white

spots on the rump. This species inhabit Morocco, Barbary, Persia, Arabia, and other places in Asia.

12. *S. cercop. nemaeus*, the douc, has a beard on the cheeks, and a white tail; is from three feet and a half to four feet high, but Pennant says he is as tall as a man. The skin of the face and ears is almost scarlet; with a dark brown band on the fore-head; the shoulders and upper parts of the arms, thighs, and toes, are black. It walks as often on two feet as on four. This species inhabit Cochin-China, and Madagascar.

13. *S. cercop. nictitans*, the nodding monkey, is of a black color, mottled with paler spots, and has a white nose; the thumbs are very short; the buttocks covered, and the chin is beardless. There is, however, a variety with a beard. They are about two feet and a half high, and inhabit Guinea. They are playful animals, and nod frequently with their heads; whence the name.

14. *S. cercop. petauristus*, the agile monkey, is a gentle docile animal, inhabiting Guinea, about thirteen inches long, from the muzzle to the rump, and having a tail nearly twenty inches. It has a beard; the back, upper part of the tail, and outer sides of the legs are of a very dark blackish-olive color, and the face is black except a triangular white spot on the nose.

15. *S. cercop. regalis*, the king monkey, or full-bottom monkey, is above three feet high when erect: the head is small, with a short, black, naked face; and the head, cheeks, throat, neck, and shoulders, are covered with long, coarse, flowing hairs, of a dirty-yellowish color, mixed with black, and resembling a full-bottomed wig; the body, arms, and legs, are covered with short hairs of a fine glossy black color; the hands are naked and have no thumbs; the feet have five very long slender toes, which are armed with narrow pointed claws; the tail is very long, and is covered with snow white hairs, having a tuft at the end; the body and limbs are very slender. Its skin is held in high estimation by the negroes for making pouches and gun-cases. They inhabit the forests of Sierra Leon.

16. *S. cercop. ruber*, the patas, or red monkey, has a beard on the cheeks; the top of the head, back, and tail, are of a blood-red color; and in some of a brilliant red. There are other two varieties; the one with a black band over the eyes, and a yellow beard; the other with a white band, and a white beard. They all inhabit Senegal, Congo, and other hot parts of Africa. They have cheek-pouches, and callosities on the buttocks. They are from eighteen to twenty-four inches long, from muzzle to rump; the tail about twenty-six inches. The females menstruate.

17. *S. cercop. sabaeus*, the green monkey, has a black and flattish face: the side of it bounded by long white hairs, falling backwards, and almost covering the ears, which are black, and like the human: head, limbs, and whole upper part of the body and tail covered with soft hair, of a yellowish-green color at their ends, cinereous at their roots: under side of the body and tail, and inner side of the limbs, of a silvery color: tail

very long and slender. They are of the size of a small cat; inhabit different parts of Africa: keep in great flocks, and live in the woods: are scarcely discernible when among the leaves, except by their breaking the boughs with their gimbols: in which they are very agile and silent: even when shot at, they do not make the least noise: but will unite in company, knit their brows, and gnash their teeth, as if they meant to attack the enemy: they are very common in the Cape de Verd Islands. The females menstruate.

18. *S. cercop. silenus albibarbus*, the white-bearded black wanderu, the ouanderou of Buffon, and lion-tailed baboon of Pennant, has a dog-like face, is naked, and of a dusky color; a very large and full white or hoary beard; large canine teeth; body covered with black hair; belly of a light color; tail terminated with a tuft of hair like that of a lion. Its bulk that of a middling sized dog. It inhabits the East Indies and the hotter parts of Africa.

19. *S. cercop. silenus purpuratus*, the purple-faced monkey, has a great triangular white beard, short and pointed at the bottom, and on each side of the ears, extending in a winged fashion far beyond them; face and hands purple, body black. They inhabit Ceylon; are very harmless; live in the woods, and feed on leaves and buds of trees; and when taken soon become tame.

20. *S. cercop. sinicus*, the rillow or Chinese bonnet, has a long smooth nose, of a whitish color; hair on the crown of the head long, lying flat, and parted like that of a man; color, a pale cinereous brown. They inhabit Ceylon; keep in great troops; and rob gardens of their fruit, and fields of their corn; to prevent which the natives are obliged to watch the whole day; yet these animals are so bold, that, when driven from one end of the field, they will immediately enter at the other, and carry off with them as much as their mouths and arms can hold. Bosman, speaking of the thefts of the monkeys of Guinea, says that they will take in each paw one or two stalks of millet, as many under their arms, and two or three in their mouth; and, thus laden, hop away on their hind legs; but, if pursued, they fling away all, except what is in their mouths, that it may not impede their flight. They are very nice in the choice of the millet; examine every stalk; and, if they do not like it, fling it away; so that this delicacy does more harm to the fields than their thievery.

21. *S. cercop. talapoinus*, the talapoin, is a native of India; about a foot long from nose to rump, and has a tail nearly eighteen inches long. It has cheek-pouches, with a beard on the chin and cheeks, and callosities on the buttocks; it is a beautiful figure, of a brownish-green color; with the tip of the nose, ears, and soles of the feet black. The species are gentle and playful. There is a variety which differs only in being all black.

22. *S. cercop. veter*, the lowando, has a long tail and is bearded; the body and limbs are white; the beard black. This animal has all the characters of a baboon in figure and dispositions. It is so wild and ferocious that it must be kept in an iron cage. It is from three feet to

three feet and a half high; the tail is eight inches long; it has cheek-pouches, and callosities on the buttocks; its tusks are larger and longer than in man; the muzzle is thick and strong; the head is environed with a broad mane and a large black beard; it both walks erect and on all fours. In the woods, where they are in a state of liberty, they are exceedingly wild; and, being violently fond of women, a woman would have no chance of resistance, if meeting one of them alone. The females menstruate. Dr. Kerr enumerates several other species and varieties of cercopithei, but their history is uncertain and unimportant.

23. *S. inius*, the maggot, or Barbary ape, has a long face, not unlike that of a dog; canine teeth, long and strong; ears like the human; nails flat; buttocks bare; color of the upper part of the body adirty greenish-brown; belly of a dull pale yellow; grows to above four feet in length. They inhabit many parts of India, Arabia, and all parts of Africa, except Egypt. A few are found on the hill of Gibraltar, which breed there; probably from a pair that had escaped from the town, as they are not found in any other part of Spain. They are very ill-natured, mischievous, and fierce; agreeing with the character of the ancient cynocephalia. They are very common in exhibitions. By discipline they are made to play some tricks; otherwise they are more dull than the rest of this genus. They assemble in great troops in the fields of India, and will attack women going to market, and take their provisions from them. The females carry the young in their arms, and will leap from tree to tree with them. Apes were worshipped in India, and had magnificent temples erected to them. When the Portuguese plundered one in Ceylon, they found in a little golden casket the tooth of an ape; a relic held by the natives in such veneration that they ~~offered~~ 700,000 ducats to redeem it, but in vain; for it was burnt by the viceroy, to stop the progress of idolatry.

24. i. *S. lar*, the great gibbon, or long-armed ape, has a flat swarthy face, surrounded with grey hairs; hair on the body black and rough; buttocks bare; nails on the hands flat; on the feet long; arms of a most disproportionate length, reaching quite to the ground when the animal is erect, its natural posture. They inhabit India, Malacca, and the Molucca isles; are mild and gentle; grow to the height of four feet, sometimes as tall as a man. The great black ape of Mangsi, in China, seems to be of this kind. 'This species,' says Mr. Kerr, 'is impatient of cold and rain; and approaches nearer to the manners of mankind than even the orang-outang, being more inclined to the erect posture.' The female has the catamema.

24. ii. *S. lar argentea*, the silvery gibbon, is a variety resembling the great gibbon, except in color, and it is more elegantly shaped. The body and arms are covered with silvery hairs; the face, ears, crown of the head, and hands are black. It is three feet high when erect. They inhabit the forests of Devat in Bengal. Lord Clive brought home one of them. They are good natured and frolicksome.

24. iii. *S. lar minor*, the lesser gibbon, resem-

bles the great gibbon, but is much less, being only about a foot and a half high; the body and face are of a brown color. They inhabit Malacca.

III. *S. papiones*, baboons. These have short tails; a long face; a broad high muzzle; longish dog-like tusks, or canine teeth; and naked callosities on the buttocks. They are only found in the old world, and are the papiones and κυνοκεφαλα of the ancients.

25. *S. papio apedia*, the little baboon, has a roundish head, with a projecting muzzle, and roundish naked ears; the hair on the body is yellow, tipped with black; the face is brown, and almost naked, having only a few scattered hairs; the nails are all compressed and oblong, except on the thumbs and great toes, the nails of which resemble man; the tail is very short, being hardly an inch long; the body is about the size of a cat. It is uncertain, says Gmelin, if this animal should be considered as a distinct species, or only as a variety of the simia scireua.

26. *S. papio cinerea*, the cinereous baboon, is about two feet high, and has a dusky face with a pale brown beard; the body and limbs are of a cinereous brown; and the crown of the head is mottled with yellow.—Pennant.

27. *S. papio cristata*, the crested baboon, has very long and dishevelled hair on the head and cheeks. It is about two feet high, and the tail seven inches, taper and slender; the body and limbs are covered with long black hair; the breast is whitish; the face, hands, and feet, are naked and black. They inhabit Africa.

28. *S. papio livea*, the blue-faced baboon, has a pale brown beard, a bluish face, and two very broad, flat, fore-teeth. It is about three feet high; has long hairs over its eyes, and a tuft behind each ear.

29. *S. papio maimon*, the mandril, or ribbed nose baboon, has a short tail, and a thin beard on the chin; the cheeks are blue and striped, and the buttocks are naked. This species is found on the Gold coast, and in other southern provinces of Africa, where he is called boggo by the negroes, and mandril by the Europeans. Next to the orang-outang, he is the largest of all the apes or baboons. Smith relates that he had a present of a female mandril, which was only six months old, and that it was as large as an adult baboon. He adds that these mandrills walk always on two feet; that they weep and groan like men; that they have a violent passion for women, which they never fail to gratify when they find a woman at a distance from relief.

30. *S. papio mormon*, the mantegar, or mangier, commonly called the tufted ape; but it is improperly named an ape, as it has a tail. It is described in the Philos. Trans. Abr. No. 290. It had a nose and head fourteen inches in length; the nose of a deep red, face blue, both naked; black eye-brows; ears like the human; on the top of the head a long upright tuft of hair; on the chin another; two long tusks in the upper jaw; fore feet exactly resembling hands, and the nails on the fingers flat; the fore part of the body, and the inside of the legs and arms naked; the outside covered with mottled brown and olive hair. Length, from the nose to the rump, three

feet two inches. It was very fierce and falacious; went on all fours, but would sit up on its rump, and support itself with a stick; in this attitude, it would hold a cup in its hand, and drink out of it. Its food was fruits.

31. *S. papio nemestrina*, the maimon, or pig-tailed baboon, with a pointed face, which is naked, of a swarthy redness; two sharp canine teeth; ears like the human; hair on the limbs and body brown, inclining to ash-color, palest on the belly; fingers black; nails long and flat; thumbs on the hind feet very long, connected to the nearest toe by a broad membrane; tail four inches long, slender, exactly like a pig's, and almost naked; the bare spaces on the rump red, and but small; length, from head to tail, twenty-two inches. They inhabit the isles of Sumatra and Japan, and are very docile. In Japan they are taught several tricks, and carried about the country by mountebanks. Kempfer was informed by one of these people that the baboon he had was 102 years old. Mr. Kerr says, it has cheek pouches, callosities on the buttocks, and a naked curled up tail, five or six inches long. The male organs are concealed under the skin. When erect it is from two to two and a-half feet high. The female menstruates. This is a vivacious, gentle, tractable, and even caressing animal, without any of the immodesty of most baboons.

32. *S. papio platypygos*, the brown baboon, has pointed ears; face of a dirty white; nose large and broad; hairs round the face short and straight; color of the upper part of the body brown; of the under ash-color; a tail about four inches long; taper and almost bare of hair; beneath quite naked. Mr. Pennant refers the new baboon, described in his first edition, to this species.

33. *S. papia porcaria*, the hoggish baboon, has a short tail, and colored buttocks; the head is like that of a hog, with a naked snout; the body is of an olive brown color, the nails are sharp and compressed. Inhabits Africa, and is about three feet and a-half high when standing erect. This probably is the same animal with the hog-faced ape, adopted from Pennant.

34. *S. papio sphinx*, the great baboon, with hazel irides; ears small and naked; face canine, and very thick; middle of the face and forehead naked; and of a bright vermilion color; tip of the nose of the same, and ending truncated like that of a hog; sides of the nose broadly ribbed, and of a fine violet hue; the opening of the mouth very small; cheeks, throat, and goat-like beard, yellow; hair on the fore-head very long, turns back, is black, and forms a kind of pointed crest. Head, arms, and legs, covered with short hair, yellow and black intermixed; the breast with long whitish-yellow hairs, the shoulders with long brown hair. Nails flat; feet and hands black; tail four inches long, and very hairy; buttocks bare, red, and filthy; but the space about them is of a most elegant purple color, which reaches to the inside of the upper part of the thighs. This was described by Mr. Pennant from a stuffed specimen in Sir Ashton Lever's museum. In August 1779 a live animal of this species was shown at Edinburgh, and in October

following at Chester, where, being seen by Mr. Pennant, that inquisitive naturalist has described it in his History of Quadrupeds. ‘ It differed little,’ he observes, ‘ in color from the above, being in general much darker. Eyes much sunk in the head and small. On the internal side of each ear was a white line, pointing upwards. The hair on the fore-head turned up like a toupee. Feet black; in other respects resembled the former. In this I had an opportunity of examining the teeth. The cutting teeth were like those of the rest of the genus; but, in the upper and lower jaw, were two canine, or rather tusks, nearly three inches long, and exceedingly sharp and pointed. This animal was five feet high, of a most tremendous strength in all its parts; was excessively fierce, libidinous, and strong.’ Mr. Kerr confirms this account, and adds that they are very apt to offer violence to women. Mr. Schreber says, that this species lives on succulent fruits and on nuts; is very fond of eggs, and will put eight at once into its pouches, and, taking them out one by one, break them at the end, and swallow the yolk and white; rejects all flesh meat, unless it be dressed; would drink quantities of wine or brandy; was less agile than other baboons; very cleanly: for it would fling its excrements out of its hut. That which was shown at Chester was particularly fond of cheese. Its voice was a kind of roar, not unlike that of a lion, but low and somewhat inward. It went upon all fours, and never stood on its hind-legs unless forced by the keeper; but would frequently sit on its rump in a crouching manner, and drop its arms before the belly. They inhabit the hotter parts of Africa.

35. *S. papio sylvatica*, or, as Mr. Kerr has it, *sylvicola*, the wood baboon; has a long dog-like face, covered with a small glossy black skin; hands and feet naked, and black like the face; hair on all parts long, elegantly mottled with black and tawny; nails white: is about three feet high when erect; tail not three inches, and very hairy on the upper top. Inhabits Guinea, where it is called by the English the man of the woods.

36. *S. papio variegata*, the yellow baboon, is of a bright yellow color, variegated with black. It strongly resembles the wood baboon, except in size, and in having hairy hands. The face is long, black, and naked; the ears are hid in the fur. It is two feet high.

IV. *S. sagoini*, *sagoins*; these have long tails, which are proportionally longer than those of the *sapajous*, straight, flaccid, entirely covered with hair, and not prehensile; that is, incapable of laying hold of any object: the cheeks have no pouches; and the buttocks, which are covered with hair, have no callosities, the partition between the nostrils is very thick, and the apertures are placed on the sides of the nose. The females do not menstruate. This race of animals is only found in America. There are six species.

37. *S. saginus argenteus*, or *argentatus*, the *mico*, or fair monkey, with a small round head; face and ears of the most lively vermillion color; body covered with most beautiful long hairs of a bright and silvery whiteness, of matchless elegance: tail of a shining dark chestnut: head

and body eight inches long, tail twelve. They inhabit the banks of the Amazons; and were discovered by M. de Condamine.

38. i. *S. saginus jacchus*, the *sanglin*, or striated monkey, with a very round head; about the ears two very long full tufts of white hairs standing out on each side; irides reddish; face a swarthy flesh color; ears like the human; head black; body ash-colored, reddish, and dusky; the last forms striated bars across the body; tail full of hair, annulated with ash-color and black; body seven inches long; tail nearly eleven; hands and feet covered with short hairs; fingers like those of a squirrel; nails, or rather claws, sharp. They inhabit Brasil; feed on vegetables; will also eat fish; make a weak noise; are very restless, and are often brought over to Europe.

38. ii. *S. saginus Jacchus moschatus*, the yellowish *sanglin*, is a variety of a whitish yellow color, smelling strongly of musk. It also inhabits Brasil.

39. *S. saginus Midas*, the *tamarin*, or great-eared monkey, with a round head, swarthy, flesh-colored, naked face; upper lip a little divided; ears very large, erect, naked, and almost square; hair on the forehead upright and long; on the body soft, but shaggy; the head, whole body, and upper part of the limbs, black, except the lower part of the back, which is tinged with yellow; hands and feet covered with orange-colored hairs, very fine and smooth; nails long and crooked; tail black, and twice the length of the body; teeth very white. It is of the size of a squirrel. It inhabits the hotter parts of South America, and the isle of Gorgona, South of Panama, in the South Sea.

40. *S. saginus cepidus*, the *pinche*, or red-tailed monkey, is beardless; has a flowing head of hair, which hangs down on each side; a red tail and sharp claws. It has neither cheek-pouches nor callosities on the buttocks. His tail is not prehensile, and is more than twice the length of the head and body. The partition of the nostrils is thick, and the apertures are placed at a side. The face, throat, and ears, are black; on the head are long white hairs. The muzzle is broad, and the face round. The hair on the body is pretty long; of a yellowish-brown, or reddish color till near the tail, where it becomes orange; on the breast, belly, hands, and feet, it is white, and shorter than on the body. The tail, from the origin to one-half of its length, is a vivid red, then brownish-red, and toward the point it is black. He is about nine inches long, and walks on four feet. The females are not subject to the menstrual evacuation.

41. *S. saginus pithecia*, the *saki*, or fox-tailed monkey, with a swarthy face, covered with short white down; forehead and sides of the face with whitish and pretty long hair; body with long dusky brown hairs, white or yellowish at their tips; hair on the tail very long and bushy; sometimes black, sometimes reddish; belly and lower part of the limbs a reddish white; length from nose to tail nearly a foot and a half; tail longer, and like that of a fox; hands and feet black, with claws instead of nails. They inhabit Guiana.

42. *S. saginus rosalius*, the marikina, or silky monkey, is beardless; has a very hairy head; the circumference of the face and the feet are red; and the claws are sharp and narrow. A brisk animal, less impatient of cold than the rest of this race; the body is of a yellowish white color; the nails on the thumbs and great toes are rounded; the ears are naked, but are hidden beneath the fur. It has a round head and a brown face, which is surrounded with a kind of mane of a bright red color; the hair on the body and tail is long, silky, and of a pale but vivid yellow color, almost white, with a considerable tuft at the extremity of the tail. It walks on four feet, and is eight or nine inches long, from the muzzle to the rump; and the tail is above thirteen inches long. This species has the same manners and vivacity with the other sagoins, but is more robust in constitution, as an individual lived five or six years in Paris, being kept in a warm room during winter. They inhabit South America.

V. *S. sapaji*, sapajous, have no cheek-pouches, but long prehensile tails, which, at the extremity, are generally deprived of hair on the under side, and covered with a smooth skin; this part they can fold, extend, curl up, and unfold at pleasure; by which they are enabled to hang upon branches, or to lay hold of any thing which is beyond the reach of their hands, using the extremity of the tail like a finger; the partition between the nostrils is very thick; and the apertures are situated on the sides of the nose; the buttocks are clothed with hair, and have no callosities; the females of this subgenus do not menstruate; and this race of animals is only to be found in America. This subdivision of the genus is made with great propriety by Dr. Gmelin, after the count de Buffon.

43. *S. sapajus apelia*, the brown sapajou, has a long sub-prehensile tail, and no beard; the body is brown; the legs black, and the buttocks hairy. It is a lively active animal; constantly looking about on all sides; bears cold well; its cry resembles that of a young turkey; the circumference of its face appears as if shaved.

44. *S. sapajus beelzebub*, the guariba, or preacher monkey, has black shining eyes; short round ears; and a round beard under the chin and throat. The hairs on the body are of a shining black, long, yet lie so close on each other that the animal appears quite smooth; the feet and end of the tail are brown; the tail is very long, and always twisted at the end. They are of the size of a fox; inhabit the woods of Brasil and Guiana in vast numbers, and make a most dreadful howling. Sometimes one mounts on a higher branch, the rest seat themselves beneath; the first begins as if it was to harangue, and sets up so loud and sharp a howl as may be heard at a vast way, and a person at a distance would think that a hundred joined in the cry; after a certain space, he gives a signal with his hand, when the whole assembly join in chorus; but on another signal are silent, and the orator finishes his address. This is related by Marcgrave, a writer of credit, from his own knowledge, having long resided in Brasil. Their clamor is the most disagreeable and tremendous that can be

conceived; owing to a hollow and hard bone placed in the throat, which the English call the throttle-bone. These monkeys are very fierce, untameable, and bite dreadfully. There is a variety of a ferruginous or reddish bay color, which the Indians call the king of the monkeys; it is large, and as noisy as the former. The natives eat, and are fond of this species, as well as several other sorts of monkeys. Europeans will also eat it, especially in those parts of America where food is scarce; but, in doing so, they become a kind of cannibals.

45. *S. sapajus capucinus*, the sai, or weeper, with a round and flat face, of a reddish brown color, very deformed; the hair on the head and upper part of the body black, tinged with brown; beneath and on the limbs tinged with red; tail black, and much longer than the head and body; the young excessively deformed; their hair very long, and thinly dispersed. In the British Museum are specimens of old and young. M. de Buffon had a variety with a white throat. They inhabit Surinam and Brasil; appear as if always weeping; are of a melancholy disposition; but ready to imitate what they see done. These probably are the monkeys Dampier saw in the bay of All Saints, which he says are very ugly, and smell strongly of musk. They keep in large companies; and make a great chattering, especially in stormy weather; reside much on a species of tree which bears a podded fruit, which they feed on.

46. *S. sapajus exquima*, the exquima of Congo, is of the same size with the quato (No. 48), and has a prehensile tale, but differs in the color, and in having a beard. It is of a variegated black and yellow color on the back; the throat and belly are white. They inhabit Guinea, Congo, &c.

47. *S. sapajus fatuellas*, the horned sapajou, has two tufts of hair on the head, resembling little horns; and is beardless. The face, sides, belly, and fore parts of the thighs are brown; the top of the head, middle of the back, tail, legs, and posterior parts of the thighs, are black; the nails are long, and rather blunt; the tail is prehensile, and twisted spirally. Perhaps of the same species with the simia appella or capuchin (Gm.). They inhabit South America.

48. *S. sapajus paniscus*, the quato, or four-fingered monkey, has a long flat face, of a swarthy flesh color; the eyes are sunk in the head; ears like the human; limbs of a great length, and uncommonly slender; the hair is black, long, and rough. There are only four fingers on the hands, being quite destitute of a thumb; five toes on the feet. The tail is long, and naked below, near the end. The body is slender, about a foot and a half long; the tail nearly two feet, and so prehensile as to serve every purpose of a hand. They inhabit the neighbourhood of Carthagena, Guiana, Brasil, and Peru; associate in vast herds; and are scarcely ever seen on the ground. Dampier describes their gambols in a lively manner: 'There was,' says he, 'a great company dancing from tree to tree over my head, chattering, and making a terrible noise, and a great many grim faces and antic gestures; some broke down dry sticks and flung

them at me, others scattered their urine and dung about my ears; at last one bigger than the rest came to a small limb just over my head, and, leaping directly at me, made me leap back; but the monkey caught hold of the bough with the tip of its tail, and there continued swinging to and fro, making mouths at me. The females with their young ones are much troubled to leap after the males; for they have commonly two; one she carries under her arm, the other sits on her back, and clasps its two fore-paws about her neck; are very sullen when taken; and very hard to be got when shot; for they will cling with their tail or feet to a bough as long as any life remains. When I have shot at one, and broke a leg or arm, I have pitied the poor creature to see it look and handle the broken limb, and turn it from side to side.—They are the most active of monkeys, and quite enliven the forests of America. In order to pass from top to top of lofty trees, whose branches are too distant for a leap, they will form a chain, by hanging down, linked to each other by their tails, and swinging in that manner till the lowest catches hold of a bough of the next tree, and draws up the rest; and sometimes they pass rivers by the same expedient. They are sometimes brought to Europe; but are very tender, and seldom live long in our climate.

49. *S. sapajus sciureus*, the samairi, or orange-monkey, has no beard; the hinder part of the head is prominent; and the nails on the four toes of the hind paws are narrow and pointed. They inhabit South America, and are the most beautiful of all the sapajous; their movements are graceful; size small; color a brilliant yellow; visage round, with large vivacious eyes, surrounded by flesh-colored rings; hardly any forehead; the nose is elevated at the base, and flattened at the point; the mouth small, the face flat and naked, and the ears are garnished with hair, and a little pointed; the tail is only half prehensile: they stand with ease on two feet, but commonly walk on all four.

50. *S. sapajus seniculus*, the arabata, is of a dusky red color, and has a beard on the chin, which is large, and resembles the human chin. It is a savage animal, as large as a calf, and by a singular boney structure in the throat, makes a terrible noise, which is heard at a great distance. They assemble in great flocks on trees, and salute passengers with loud cries in a hoarse disagreeable voice.

51. *S. sapajus syrichtus*, the magu of Petiver, is beardless, but has the mouth and orbits surrounded with long hairs. It is of a small size, and inhabits the Philippines.

52. *S. sapajus trepidus*, the sajou, or fearful monkey of Pennant, has a black erect hemispherical tuft of hair on the forehead, and no beard; the hands and feet are blue; it is a foot long; the tail is long and hairy; the nails are rounded; the face and ears are flesh colored. There are two varieties, the brown and the gray. They agree with the climate of Europe, live long, and propagate. They are nimble, dexterous, and amusing.

53. *S. sapajus variegatus*, the variegated sapa-jou, or Antigua monkey of Pennant, has the hair

on the sides and back of an intimately mixed orange and black color. It is lively, good natured, and full of tricks; the body is eighteen inches long, from nose to rump; the tail, which is prehensile, twenty inches long. The face is black, nose short, belly white, legs black, insides ash-color, and tail a dusky ash.

54. i. *S. satyrus*, the orang-outang, or great ape, has a flat face, and a deformed resemblance of the human; ears like those of a man; the hair on the head longer than on the body. The body and limbs are covered with reddish and shaggy hair; longest on the back, thinnest on the fore parts. The face and paws are swarthy; the buttocks covered with hair. They inhabit the interior parts of Africa, the Isles of Sumatra, Borneo, and Java; are solitary, and live in the most desert places. They grow to the height of six feet; have prodigious strength, and will overpower the strongest man. The old ones are shot with arrows, the young alone can be taken alive. They live entirely on fruits and nuts. They will attack and kill the negroes who wander in the woods; will drive away the elephants, and beat them with their fists or pieces of wood; and will throw stones at people that offend them. They sleep in trees; and make a sort of shelter from the inclemency of the weather. They are of a grave appearance and melancholy disposition, and even when young not inclined to frolic. They go erect, and are vastly swift and agile. Froger informs us (Descr. Hist. du Macacar, p. 51), 'that those along the banks of the river Ganges are larger and more mischievous than in any part of Africa: the negroes dread them, and cannot travel alone in the country without running the hazard of being attacked by these animals, who often present them with a stick, and force them to fight. I have heard the Portuguese say that they have often seen them hoist up young girls, about seven or eight years old, into trees, and that they could not be wrested from them without a great deal of difficulty. The most part of the negroes imagine them to be a foreign nation come to inhabit their country, and that they do not speak for fear of being compelled to work.' When taken young, they are capable of being tamed, and taught to perform many menial offices. Francis Pyrard relates (in his Voyages, vol. ii p. 331), 'that in the province of Sierra Leonia there is a species so strong limbed, and so industrious, that, when properly trained and fed, they work like servants; that they generally walk on the two hind feet; that they pound any substances in a mortar; that they go to bring water from the river in small pitchers, which they carry full on their heads. But, when they arrive at the door, if the pitchers are not soon taken off, they allow them to fall; and, when they perceive the pitchers overturned and broken, they weep and lament.' Father Jarric, quoted by Nieremberg, says the same thing, nearly in the same terms. With regard to the education of these animals, the testimony of Shoutten accords with that of Pyrard. 'They are taken,' he remarks, 'with snares, taught to walk on their hind feet, and to use their fore feet as hands in performing different operations, as rinsing glasses, carrying drink round to the com-

pany, turning a spit,' &c. 'I saw at Java,' says Guat, 'a very extraordinary ape. It was a female. She was very tall, and often walked erect on her hind feet. On these occasions, she concealed with her hands the parts which distinguish the sex. Except the eyebrows, there was no hair on her face, which pretty much resembled the grotesque female faces I saw among the Hotentots at the Cape. She made her bed very neatly every day, lay upon her side, and covered herself with the bed clothes. When her head ached, she bound it up with a handkerchief; and it was amusing to see her thus hooded in bed. She died in our ship, about the latitude of the Cape of Good Hope. The figure of this ape had a very great resemblance to that of man,' &c. Gmelli Carreri tells us that he saw one of these apes, which cried like an infant, walked upon its hind feet, and carried a mat under its arm to lie down and sleep upon. An orang-outang, which Buffon saw, is described by him as mild, affectionate, and good natured. 'His air was melancholy, his gait grave, his movements measured, his dispositions gentle, and very different from those of other apes. He had neither the impatience of the Barbary ape, the maliciousness of the baboon, nor the extravagance of the monkeys.' 'It may be alleged,' says our author, 'that he had the benefit of instruction; but the other apes which I shall compare with him were educated in the same manner. Signs and words were alone sufficient to make our orang-outang act; but the baboon required a cudgel, and the other apes a whip; for none of them would obey without blows. I have seen this animal present his hand to conduct the people who came to visit him, and walk as gravely along with them as if he had formed a part of the company. I have seen him sit down at table, unfold his towel, wipe his lips, use a spoon or a fork to carry his viands to his mouth, pour his liquor into a glass, and make it touch that of the person who drank along with him. When invited to take tea, he brought a cup and a saucer, placed them on the table, put in sugar, poured out the tea, and allowed it to cool before he drank it. All these actions he performed without any other instigation than the signs or verbal orders of his master, and often of his own accord. He did no injury to any person; he even approached company with circumspection, and presented himself as if he wanted to be caressed. He was very fond of dainties, which every body gave him: his breast was diseased, and he was afflicted with a teasing cough. He lived one summer in Paris, and died in London the following winter. He ate almost every thing; but preferred ripe and dried fruits to all other kinds of food. He drank a little wine; but spontaneously left it for milk, tea, or other mild liquors. This was only two feet four inches high, and was a young one. This is the variety called the Jocko. (See No. ii.) There is a great possibility that these animals may vary in size and in color, some being covered with black, others with reddish hairs. They are not the satyrs of the ancients, which had tails, and were a species of monkey. Linnæus's *homo nocturnus*, an animal of this kind, is unnecessarily separated from

his simia satyrus. Buffon describes the differences and conformities which make the orang-outang approach or recede from the human species. 'He differs from man externally by the flatness of his nose, by the shortness of his front, and by his chin, which is not elevated at the base. His ears are proportionally too large, his eyes are too near each other, and the distance between his nose and mouth is too great. These are the only differences between the face of an orang-outang and that of a man. With regard to the body and members, the thighs are proportionally too short, the arms too long, the fingers too small, the palm of the hands too long and narrow, and the feet rather resemble hands than the human foot. The male organs of generation differ not from those of man, except that the prepuce has no frenum. The female organs are extremely similar to those of a woman. The orang-outang differs internally from the human species in the number of ribs; man has only twelve, but the orang-outang has thirteen. The vertebrae of the neck are also shorter, the bones of the pelvis narrower, the buttocks flatter, and the orbits of the eyes sunk deeper. He has no spinal process on the first vertebra of the neck. The kidneys are rounder than those of man, and the ureters have a different figure, as well as the bladder and gall-bladder, which are narrower and longer than in the human species. All the other parts of the body, head, and members, both external and internal, so perfectly resemble those of man, that we cannot make the comparison without being astonished that such a similarity in structure and organisation should not produce the same effects. The tongue, and all the organs of speech, for example, are the same as in man; and yet the orang-outang enjoys not the faculty of speaking; the brain has the same figure and proportions; and yet he possesses not the power of thinking. Can there be a more evident proof than is exhibited in the orang-outang that matter alone, though perfectly organised, can produce neither language nor thought, unless it be animated by a superior principle? Man and the orang-outang are the only animals who have buttocks and the calf of the legs, and who of course are formed for walking erect; the only animals who have a broad chest, flat shoulders, and vertebrae of the same structure; and the only animals whose brain, heart, lungs, liver, spleen, stomach, and intestines, are perfectly similar, and who have an appendix vermiformis, or blind-gut. In fine, the orang-outang has a greater resemblance to man than even to the baboons or monkeys, not only in all the parts we have mentioned, but in the largeness of the face, the figure of the cranium, of the jaws, of the teeth, and of the other bones of the head and face; in the thickness of the fingers and thumbs, the figure of the nails, and the number of vertebrae; and, lastly, in the conformity of the articulations, the magnitude and figure of the rotula, sternum, &c. Hence, as there is a greater similarity between this animal and man than between those creatures which resemble him most, as the Barbary ape, the baboon, and monkey, who have all been designated by the general name of apes, the Indians

are to be excused for associating him with the human species, under the denomination of orang-outang, or wild man. In fine, if there were a scale by which we could descend from human nature to that of brutes, and if the essence of this nature consisted entirely in the form of the body, and depended on its organisation, the orang-outang would approach nearer to man than any other animal. Placed in the second rank of beings, he would make the other animals feel his superiority, and oblige them to obey him. If the principle of imitation, by which he seems to mimic human actions, were a result of thought, this ape would be still farther removed from the brutes, and have a greater affinity to man. But the interval which separates them is immense. Mind, reflexion, and language, depend not on figure or the organisation of the body. These are endowments peculiar to man. The orang-outang, though he counterfeits every human movement, performs no action that is characteristic of man, no action that has the same principle or the same design.

54. ii. *S. satyrus jocco*, the jocco, a variety of the orang-outang, is only about two feet and a half high. This is the variety above described by count Buffon, as so extremely mild and docile. He very much resembles the pongo, allowing for the difference of size. Mr. Pennant makes them both one species with the troglodytes, or chimpanzee, but he seems to be mistaken. Mr. Kerr arranges both very properly as varieties of the orang-outang.

54. iii. *S. satyrus pongo*, the pongo, inhabits the island of Java, and the interior parts of Guinea. He has no pouches within his cheeks, no tail, and no callosities on the buttocks; which last are plump and fleshy. All the teeth are similar to those of man. The face is flat, naked, and tawny; the ears, hands, feet, breast, and belly, are likewise naked: the hair of the head descends on both temples in the form of tresses; the hair on the back and loins is in small quantities. It is five or six feet high, and walks always erect on the two hind feet. It has not been ascertained whether the females of this species, or variety, are subject to periodical discharges; but analogy renders this almost unquestionable. This animal is, by Dr. Gmelin, considered only as a variety of the orang-outang, and we rank it as such accordingly.

55. *S. sylvanus*, the pigmy, has no tail; the buttocks are naked; the head roundish; and the arms shorter than the body. It inhabits Africa and Ceylon; and is not uncommon in our exhibitions of animals; is very tractable and good-natured, and was most probably the pigmy of the ancients. It abounds in Ethiopia, one seat of that imaginary nation; was believed to dwell near the fountains of the Nile, whence it descended annually to make war on the cranes, i.e. to steal their eggs, which the birds may be supposed naturally to defend; whence the fiction of their combats.

56. *S. troglodytes*, the chimpanzee of Linnaeus, common in the mountains of Sierra Leon, resembles man more than the orang-outang. This animal was first brought to Europe in August 1738, when it was exhibited in London.

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The following description of one that was kept some months at the colony of Sierra Leon is given by Wadstrom, in his Essay on Colonisation. He was nearly two feet high; but the full stature is nearly five feet. He was covered with black hair, long and thick on the back, but short and thin on the breast and belly. His face was bare; his hands and his head resembled those of an old black man, except that the hair on his head was straight. He ate, drank, slept, and sat at table, like a human being. At first he crept on all fours, on the outside of his hands; but, when grown larger, he endeavoured to go erect, supporting himself by a stick. He was melancholy, but always good natured. Mr. Kerr's description is similar:—‘He has no tail. The head is conical; the whole body is of a robust brawny make; the back and shoulders are covered with hair, and the rest of the body is naked.’

**SIMILAR,** *adj.* Fr. *similaire*; Lat. *similis*.

**SIMILARY,** Homogeneous; having one

**SIMILARITY,** *n.s.* part like another; uniform:

**SIMILE,** a simile is a likeness; il-

**SIMILITUDE.** Illustration by way of comparison: the other noun substantives correspond with similar.

Lucentio slipped me, like his greyhound,  
Which runs himself, and catches for his master,  
—A good swift simile, but something curish.

Shakspeare.

Our immortal souls, while righteous, are by God himself beautified with the title of his own image and similitude.

Raleigh.

*Similitude* of substance would cause attraction, where the body is wholly freed from the motion of gravity; for then lead would draw lead.

Bacon's *Natural History*.

Plutarch, in the first of his tractates, by sundry similitudes, shews us the force of education.

Wotton.

Let us make man in our image, man

In our similitude, and let them rule

Over the fish and fowl.

Milton.

The laws of England, relative to those matters, were the original and exemplar from whence those similar or parallel laws of Scotland were derived.

Hale's *Common Law of England*.

Minerals appear to the eye to be perfectly similar, as metals; or at least to consist but of two or three distinct ingredients, as cinnabar.

Boyle.

*Similitude* to the Deity was not regarded in the things they gave divine worship to, and looked on as symbols of the god they worshipped.

Stillingfleit.

Tasso, in his similitudes, never departed from the woods; that is, all his comparisons were taken from the country.

Dryden.

If we compare the picture of a man drawn at the years of seventeen, with that of the same person at the years of threescore, hardly the least trace or similitude of one face can be found in the other.

South.

Poets, to give a loose to a warm fancy, not only expatiate in their similes, but introduce them too frequently.

Garth.

The blood and chyle are mixed, and by attrition attenuated; by which the mixture acquires a greater degree of fluidity and similarity, or homogeneity of parts.

Arbuthnot.

In argument,

Similes are like songs in love;

They much describe, they nothing prove.

Prior.

Fate some future bard shall join,

In sad similitude of griefs to mine;

2 C

Condemned whole years in absence to deplore,  
And image charms he must behold no more. *Pope.*

**SIMILE, or SIMILITUDE**, in rhetoric, a comparison of two things, which, though different in other respects, yet agree in some one. The difference between a simile and comparison is said to consist in this, that the simile properly belongs to whatever we call the quality of a thing, and the comparison to the quantity. See COMPARISON and ORATORY.

**SIM'MER, r.n.** A word made probably from the sound, but written, by Skinner, simber. To boil gently; to boil with a gentle lussing.

Place a vessel in warm sand, increasing the heat by degrees, till the spirit *simmer* or boil a little. *Boyle.*

Their vital heat and moisture may always not only *simber* in one sluggish tenour, but sometimes boil up higher, and seeth over; the fire of life being more than ordinarily kindled upon some emergent occasion. *More against Atheism.*

**SIMMONS** (John). This artist was born at Nailsea, in Somersetshire, about 1715, and served his apprenticeship to a house and ship painter at Bristol. He carried on the same business in that city till his death, which happened January 18th, 1780. Simmons painted many portraits, from some of which engravings were made; but his principal works are the altar-piece in All Saints' church, Bristol; and in St. John's church, Devizes. The subject of the first is the Annunciation, and is a very creditable performance; that of the latter the Resurrection. Hogarth thought very highly of the talents of Simmons, whose portrait of Ferguson, the astronomer, was in one of the early exhibitions of the Royal Academy.

**SIMOIS**, in ancient geography, a river of Troas, rising in mount Ida, and falling into the Xanthus: famous in poetry, for the many battles fought on its banks, and recorded by Homer, &c.

**SIMON** (Heb. שׁׂמֹן, i. e. hearing), the original name of the apostle Peter. See PETER.

**SIMON I.**, surnamed the Just, high-priest of the Jews, succeeded his father Onias I. in the reign of Ptolemy Philadelphus. He is celebrated for his justice, and for having repaired the temple of Jerusalem, which had fallen to decay, and surrounding the city with a wall.

**SIMON II.**, grandson of Simon I., succeeded his father Onias II. in the reign of Ptolemy Philopater. This monarch visited Jerusalem in the time of Simon, and, notwithstanding the high-priest's remonstrances, entered and profaned the temple, and would have even gone into the sanctum sanctorum, if he had not been suddenly struck down. The particulars of this visit, with its consequences, and the extraordinary event that happened to the Jews at Egypt, are related under EGYPT and JEWS.

**SIMON**, a Cyrenian, the father of Alexander and Rufus, who were afterwards eminent Christians. He had the singular honor to assist our Saviour in bearing his cross. Some commentators think him the same with Niger, the teacher at Antioch, Acts xiii. 1. He was afterwards made bishop or presbyter of Bezer, or Bosra.

**SIMON**, a pharisee, who entertained our Saviour, but neglected some of the marks of polite atten-

tion usually paid to guests among the Jews on such occasions, for which he was justly reproved (Luke vii. 36—50): and which affords a proof that true politeness is not inconsistent with Christianity. Some think he was the same person with Simon whom Jesus cured of a leprosy, and in whose house at Bethany he supped along with Lazarus, and was anointed by Mary, a few days before his death. Math. xxvi. 6. John xii. 1—5.

**SIMON**, a currier at Athens, whom Socrates often visited, on account of his uncommon genius and talents. He collected all the information he could procure from Socrates, and published it, with his own remarks, in thirty-three dialogues. He was the first of Socrates's disciples who gave an account of his master's opinions on virtue, justice, honor, music, poetry, &c. His Dialogues were extant in the age of Diogenes, the biographer. Diog. ii. c. 14.

**SIMON** (Richard) was born at Dieppe the 15th May 1638. He began his studies among the priests of the Oratory in that city, but soon left them. From Dieppe he went to Paris, where he made great progress in the oriental languages. Some time afterwards he joined the society of the Oratory again, and became a priest of it in 1660. In 1670 he published some small pieces. In 1678 his Critical History of the Old Testament appeared, but was immediately suppressed by the intrigues of Messieurs du Port Royal. It was reprinted in 1679, and its merits soon drew the attention of foreigners; an edition of it was accordingly published at Amsterdam in Latin, and at London in English. He died at Dieppe in 1712, at the age of seventy-four. He was very learned; his criticism is exact, but not always moderate; and there reigns in his writings a spirit of novelty and singularity which raised him many adversaries. The most celebrated of these were Le Clerc, Vossius, Jurieu, Du Pin, and Bossuet. Simon wrote an answer to most of the books published against him, in which he displays great pride and obstinacy. The following are his principal works: 1. The Ceremonies of the Jews, translated from the Italian of Leo of Modena, with a supplement concerning the Barraites and Samaritans. 2. L'Histoire Critique du Vieux Testament. This work deserves the attention of every clergyman. He sometimes, however, deviates from integrity, to serve the cause of the church of Rome. These passages have been very justly exposed and confuted by Dr. Campbell, in his ingenious Preliminary Dissertations to his new Translation of the Gospels. 3. Critical History of the Text of the New Testament. 4. Critical History of the Versions of the New Testament. 5. Critical History of the principal Commentators on the New Testament. 6. Inspiration of the Sacred Books. 7. A Translation of the New Testament. This was censured by cardinal de Noailles and Bossuet. 8. The History of the Rise and Progress of Ecclesiastical Revenues, which is commended by Voltaire, as is his Critical History of the Old Testament. 9. A New Select Library, which points out the good books in various kinds of literature, and the use to be made of them. 10. Critical History of the Belief and Customs of

the Nations on the Levant. 11. Critical Letters, &c.

**SIMON MACCABEUS**, a celebrated leader and high-priest of the Jews, who, after rendering the most important services to his country, was at last treacherously murdered by his son-in-law. See JEWS.

**SIMON MAGUS**, or the sorcerer, was a native of Gitton, a village of Samaria. He visited Egypt, where he probably became acquainted with the mysteries taught in the Alexandrian school, and learned those theurgic or magical operations by means of which it was believed that men might be delivered from the power of evil demons. Upon his return to Samaria, the author of the Clementine Recognitions relates, that he imposed upon his countrymen by high pretensions to supernatural powers. And St. Luke attests that this artful fanatic, using sorcery, had bewitched the people of Samaria, giving out that he was some great one; and that he obtained such general reverence in Samaria, that the people all believed him to be ‘the great power of God.’ By the preaching of Philip the deacon he was, with other Samaritans, converted to the Christian faith, and admitted into the church by baptism. His conversion, however, seems not to have been real; for, upon seeing the miraculous effects of the laying on of the apostles’ hands, he offered them money to purchase similar powers. He probably thought Peter and John magicians like himself, but better skilled in the art of deceiving the multitude. Being sharply reproved for this iniquity, he seems by his answer to have been sensible of his sin; but his repentance, if sincere, was of short duration. Returning to his former practices of imposture, he travelled through various provinces of the empire, opposing the progress of the gospel; and, arriving at Rome, he led astray vast numbers of people by his pretended miracles. How long he lived in that metropolis, or in what manner he died, we have no certain accounts. The Christian writers tell us, that being raised in the air by two demons, he was deprived of their support by the prayers of St. Peter and St. Paul, and falling, broke his legs. By some he is thought to have been the person mentioned by Suetonius, who, undertaking to fly in the presence of Nero, fell to the ground with such violence that his blood spurted up to the gallery where the emperor was sitting. The sum of this impostor’s doctrine was, that from the Divine Being, as a fountain of light, flow various orders of æons, or eternal natures, subsisting within the plenitude of the divine essence; that beyond these, in the order of emanation, are different classes of intelligences, among the lowest of which are human souls; that matter is the most remote production of the emanative power; which, on account of its infinite distance from the Fountain of Light, possesses sluggish and malignant qualities, which oppose the divine operations, and are the cause of evil; that it is the great design of philosophy to deliver the soul from its imprisonment in matter, and restore it to that divine light from which it was derived; and that for this purpose God had sent him, one of the first æons, among men. To his wife Helena he also ascribed a similar kind of divine nature,

pretending that a female æon inhabited the body of this woman, to whom he gave the name of *Euroia*, Wisdom; whence some Christian fathers have said that he called her the Holy Spirit. He also taught the transmigration of souls, and denied the resurrection of the body.

**SIMON MENNO**. See MENNO.

**SIMON OF DURHAM**. See SIMEON.

**SIMON (St.)**, the brother of our Saviour, in the language of the Jews, or more properly his cousin german, was the son of Cleophas, or Alpheus, by Mary, the sister of our Lord’s mother. He is said to have been chosen bishop or presbyter of Jerusalem, after the martyrdom of his brother James the Less. He is said to have suffered martyrdom during the persecution under Trajan, when strict enquiry was made after all the remnants of the family of David; and, after being tortured for some days, he was crucified in Syria, A.D. 107, in the 102d year of his age.

**SIMON THE CANAANITE**, or **SIMON ZELOTES** (St.), one of the twelve apostles. He is said to have been styled Zelotes, from his zeal, before his conversion, in refusing to pay tribute to the Romans; and Canaanite, instead of Canaite, from his being a native of Cana in Galilee. He is said to have preached the gospel in Britain, as well as in Egypt, Lybia, Cyrenaica, and Mauritania; in which last country he suffered martyrdom; though others say he was martyred at Lunir in Persia, along with St. Jude.

**SIMONEAU** (Charles), an eminent French engraver, born at Orleans in 1639. He was pupil to Noel Quipel; and became famous for the medals he engraved to complete the history of Louis XIV. He died in 1723.

**SIMONIDES**, the name of several poets celebrated in antiquity; but, by the Marbles, it appears that the eldest and most illustrious of them was born in the 55th Olympiad, 538 years B.C., and that he died in his ninetieth year; which nearly agrees with the chronology of Eusebius. He was a native of Ceos, one of the Cyclades, and the preceptor of Pindar. His father’s name was Leoprepis, or Thcoprepis. Both Plato and Cicero give him the character, not only of a good poet and musician, but of a person of great virtue and wisdom. His longevity gave him an opportunity of knowing a great number of the first characters in antiquity. Fabricius tells us, from ancient authority, that Simonides was contemporary and in friendship with Rittacus of Mitylene, Hipparchus tyrant of Athens, Pausanias king of Sparta, Hiero tyrant of Syracuse, with Themistocles, and with Alevades king of Thessaly. He is mentioned by Herodotus; and Xenophon, in his Dialogue upon Tyranny, makes him one of the interlocutors with Hiero king of Syracuse. Cicero relates, what has often been quoted in proof of the modesty and wisdom of Simonides, that, when Hiero asked him for a definition of God, the poet required a whole day to meditate on so important a question; at the end of which, upon the prince putting the same question to him a second time, he asked two days respite; and in this manner he always doubled the delay each time he was required to answer it; till at length he frankly confessed that he found the question so difficult, that the more he meditated

upon it, the less was his hope of being able to solve it. In his old age he became somewhat mercenary. He was often employed by the victors at the games to write panegyrics and odes in their praise; but he would never gratify their vanity till he had first tied them down to a stipulated sum for his trouble. He was frequently reproached for this vice; however, he always defended himself with good humor; of which many anecdotes are recorded. The best reason he gave for accumulating wealth was that 'he would rather leave money to his enemies after death, than be troublesome to his friends while living.' He obtained the prize in poetry at the public games when he was eighty years of age. According to Suidas, he added four letters to the Greek alphabet, viz. *η*, *ω*, *ξ*, and *Ψ*. Pliny assigns to him the eighth string of the lyre; but these claims are disputed by the learned. His poetry was so tender and plaintive that he acquired the surname of Melicertes, i.e. sweet as honey; and the tearful eye of his muse was proverbial. Dionysius places him among those polished writers who excel in a smooth volubility, and flow on, like perennial rivers, in a course of even and uninterrupted harmony. Dionysius has preserved a fragment of this poet, upon the exposure of Danae, and her infant son Perseus, by Acrisius.

**SIMONIDES**, a second great poet, recorded on the Marbles, supposed to have been grandson to the above, and who gained, in 478 B.C., the prize in the games at Athens. He flourished a few years before the Peloponnesian War; and wrote some books on Inventions, Genealogies, &c

**SIMONY**, *n.s.* Fr. *simonie*; Lat. *simonia*.

**SIMONIAC**, *n.s.* *simia*. The crime of buying

**SIMONYCAT**, *adj.* Sing or selling church preferment: the adjectives corresponding.

One that by suggestion

Tied all the kingdom; *simony* was fair play,

His own opinion was his law.

*Shakespeare. Henry VIII.*

Many papers remain in private hands, of which one is of *simony*; and I wish the world might see it, that it might undeceive some patrons, who think they have discharged that great trust to God and man, if they take no money for a living, though it may be parted with for other ends less justifiable.

*Walton's Life of Bishop Sanderson.*

Add to your criminals the *simoniacal* ladies, who seduce the sacred order into the difficulty of breaking their troth.

*Speaker.*

If the bishop alleges that the person presented is a *simoniack*, or unlearned, they are to proceed to trial.

*Ayliffe.*

No *simony* nor sinecure is known;

There works the bee, no honey for the drone.

*Garth.*

**SIMONY** is the corrupt presentation of any one to an ecclesiastical benefice for money, gift, or reward. It is so called from its resemblance to the sin of Simon Magus, though the purchasing of holy orders seems to approach nearer to his offence. It was by the canon law a very grievous crime: and is so much the more odious, because, as Sir Edward Coke observes, it is ever accompanied with perjury; for the presentee is sworn to have committed no simony. However, it was not an offence punishable in a criminal way

at the common law, it being thought sufficient to leave the clerk to ecclesiastical censures. But, as these did not affect the simoniacal patron, nor were efficacious enough to repel the notorious practice, divers acts of parliament have been made to restrain it by civil forfeitures; which the modern prevailing usage calls aloud to be put in execution. The statute 31 Eliz. c. 6, enacts that if any patron, for money or any other corrupt consideration or promise, directly or indirectly given, shall present, admit, institute, induct, install, or collate, any person to an ecclesiastical benefice or dignity, both the giver and taker shall forfeit two years' value of the benefice or dignity; one moiety to the king, and the other to any one who will sue for the same. If persons also corruptly resign or exchange their benefices, both the giver and taker shall in like manner forfeit double the value of the money or other corrupt consideration. And persons who shall corruptly ordain or license any minister, or procure him to be ordained or licensed, shall incur a like forfeiture of £40; and the minister himself of £10, besides an incapacity to hold any ecclesiastical preferment for seven years afterwards. Corrupt elections and resignations in colleges, hospitals, and other eleemosynary corporations, are also punished, by the same statute, with forfeiture of the double value, vacating the place or office, and a devolution of the right of election, for that turn, to the crown.

**SIMOOM**, a hot wind which blows occasionally in the deserts of Africa, and probably in other widely extended countries parched in the same manner by a vertical sun. Its effects on the human body are dreadful. If inhaled in any quantity, it produces instant suffocation, or at least leaves the unhappy sufferer oppressed with asthma and lowness of spirits. See **ARABIA**.

**SIMON'S (St.)**, the easternmost of the three large islands at the mouth of the Alatamaha River, in Georgia, having on the N. N. E. Little St. Simon's Island; between these is the eastern mouth of the river. It formerly had a strong battery erected here, for the defence of Jekyl Sound, in which ten or twelve forty-gun ships may ride in safety. The island is about forty-five miles in length, and from two to four in breadth, of a rich and fruitful soil, full of oak and hickory trees, intermixed with meadows. In the middle is the town of Frederica. The bar or entrance is south by west, nineteen leagues from Tybee Inlet.

**SIMON'S BAY**, a bay of Southern Africa, in the colony of the Cape of Good Hope, forming the head of False Bay, and bounding on the east the Cape peninsula. Lat. 34° 12' S.

**SIM'PER**, *v.n.* Sax. *rymbelan*, to keep holiday.—*Skinner*. He derives *simmer* from the same word. To smile; generally to smile foolishly.

A made countenance about her mouth, between *simpering* and smiling, her head bowed somewhat down, seemed to languish with over-much idleness.

*Sidney.*

I charge you, O men, for the love you bear to women, as I perceive by your *simpering* none of you hate them, to like as much as pleases them.

*Shakspeare. As You Like It.*

The wit at his elbow stared him in the face, with so bewitching a grin, that the whistler relaxed his

fibres into a kind of *simper*, and at length burst out into an open laugh. *Addison.*

Stars above *simper* and shine,  
As having keys unto thy love, while poor I pine.  
*Herbert.*

Let then the fair one beautifully cry,  
Or drest in smiles of sweet Cecilia shine,  
With *simpering* angels palms, and harps divine.  
*Pope.*

Great Tibald nods : the proud Parnassian sneer,  
The conscious *simper*, and the jealous leer,  
Mix on his look. *Id. Dunciad.*

**SIM'PLE, adj. n. s., & v. n.** Fr. *simple* ;  
**SIM'PLENESS, n. s.** Latin *simpliciter*.  
**SIM'PLESS,** Plain ; single ;

**SIM'PLETON,** unmingled ;  
**SIMPLI'CITY,** uncompound-  
**SIM'PLIST,** ed ; hence art-  
**SIM'PLY, adv.** less ; sincere ;

harmless ; unskilled ; foolish : a simple is a single ingredient ; an herb : as a verb neuter to gather simples : simpleness and simplicity mean the quality or state of being simple ; and the latter is more frequently used to express plainness ; artlessness ; singleness of character or purpose : also weakness ; silliness : simpless is Spenser's word for simplicity : a simpleton is a silly fellow ; a trifler ; a fool : a simplist, he who gathers simples or is particularly skilled in them : simply corresponds with simple, adjective.

How long, ye *simple* ones, will ye love *simplicity*,  
and fools hate knowledge ? *Prov. i. 22.*

The *simple* believeth every word ; but the prudent man looketh well to his going. *Id. xv.*

The sweet-minded Philoclea was in their degree of well-doing, to whom the not knowing of evil serveth for a ground of virtue, and hold their inward powers in better form, with an unspotted *simplicity*, than many who rather cunningly seek to know what goodness is, than willingly take unto themselves the following of it. *Sidney.*

They meet upon the way

A *simple* husbandman in garments gray.

*Huberd's Tales.*

Their weeds been not so nighly were,  
Such *simplesse* moght them shend,  
They been yclad in purple and pall,  
They reign and rulen over all. *Spenser's Pastorals.*  
Under man, no creature in the world is capable  
of felicity and bliss; because their chiefest perfection  
consisteth in that which is best for them, but  
not in that which is *simply* best, as ours doth.

*Hooker.*

Were it not to satisfy the minds of the *simple* sort  
of men, these nice curiosities are not worthy the la-  
bour which we bestow to answer them. *Id.*

They keep the reverend *simplicity* of ancienter  
times. *Id.*

I am a *simple* wooman, much too weak  
To oppose your cunning. *Shakspeare. Henry VIII.*

In low *simplicity*  
He lends out money gratis, and brings down  
The rate of usance. *Shakspeare.*

I will hear that play :  
For never any thing can be amiss,  
When *simplesness* and duty tender it. *Id.*

Our foster nurse of nature is repose  
The which he lacks ; that to provoke in him,  
Are many *simples* operative, whose power

Will close the eye of anguish. *Id. King Lear.*

I will eat and drink, and sleep as soft  
As captain shall ; *simply* the thing I am  
Shall make me live. *Shakspeare.*

To make the compound pass for the rich metal  
*simple*, is an adulteration or counterfeiting. *Bacon.*

Marquis Dorset, a man for his harmless *simplicity*  
neither disliked nor much regarded, was created  
duke. *Hawward.*

Of *simples* in these groves that grow,

We'll learn the perfect skill ;

The nature of each herb to know,

Which cures and which can kill.

*Drayton's Cynth.*

Those enter into farther speculation therein, which  
is the itch of curiosity, and content not themselves  
with the *simplicity* of that doctrine, within which this  
church hath contained herself.

*Hammond's Fundamentals.*

Such perfect elements may be found in these four  
known bodies that we call pure ones ; for they are  
least compounded, and approach most to the *simplicity*  
of the elements. *Digby.*

Suspicion sleeps

At wisdom's gate, and to *simplicity*  
Resigns her charge. *Milton.*

He would ope his leathern scrip,  
And shew me *simples* of a thousand names,  
Telling their strange and vigorous faculties. *Id.*

Accomplishing great things by things deemeed  
weak ;

Subverting worldly strong and worldly wise  
By *simply* meek. *Id. Paradise Lost.*

Mandrakes afford a papaverous unpleasant odour  
in the leaf or apple, discoverable in their *simplicity*  
and mixture. *Browne's Vulgar Errors.*

A plant so unlike a rose, it hath been mistaken by  
some good *simplists* for amomum. *Id.*

What virtue is in this remedy lies in the naked  
*simple* itself, as it comes over from the Indies.

*Temple.*

Medicine is mine : what herbs and *simples* grow  
In fields and forests, all their powers I know.

*Dryden.*

They represent our poet, when he left Mantua for  
Rome, dressed in his best habit, too fine for the place  
whence he came, and yet retaining part of its *simplicity*. *Id.*

A country farmer sent his man to look after an  
ox, the *simpleton* went hunting up and down.

*E'Fstrange.*

We are led to conceive that great machine of the  
world to have been once in a state of greater *simplicity*  
than now it is, as to conceive a watch once in  
its first and *simple* materials. *Burnet.*

*O Ethelinda,*

My heart was made to fit and pair with thine,  
*Simple* and plain, and fraught with artless tenderness.

*Roge.*

As once the foaming boar he chased,  
Lascivious Circe well the youth surveyed,  
As *simplicity* on the flowery hills he strayed. *Garth.*

Dick, *simple* odes too many show ye  
My servile complaisance to Chloë. *Prior.*

Those letters may prove a discredit, as lasting as  
mercenary scribbles, or curious *simpletons*, can make  
it. *Pope.*

Of manners gentle, of affections mild ;  
In wit a man, *simplicity* a child. *Id.*

Among substances, some are called *simple*, some  
compound, whether taken in a philosophical or vul-  
gar sense. If we take *simple* and compound in a  
vulgar sense, then all those are *simple* substances  
which are generally esteemed uniform in their na-  
tures : so every herb is called a *simple*, and every  
metal a mineral ; though the chymist perhaps may  
find all his several elements in each of them.

*Watts's Logick.*

Let Newton, pure intelligence, whom God  
To mortals lent, to trace his boundless works,  
From laws, sublimely *simple*, speak thy fame  
In all philosophy.

*Thomson's Summer.*

In *simple* manners all the secret lies;  
Be kind and virtuous, you'll be blest and wise.

*Young.*

**SIMPLE**, in the *materia medica*, is a general name for all herbs, as having each its particular virtue, whereby it becomes a simple remedy.

**SIMPLE WORDS**, in grammar, stand opposed to compound: a simple word is defined ‘that which was never more than one.’

**SIMPLICITY IN WRITING.** If we examine the writers whose compositions have stood the test of ages, and obtained that highest honor, ‘the concurrent approbation of distant times and nations,’ we shall find that the character of simplicity is the unvarying circumstance which alone has been able to gain this universal homage from mankind. Among the Greeks, whose writers in general are of the simple kind, the divinest poet, the most commanding orator, the finest historian, and deepest philosopher, are, above the rest, conspicuously eminent in this great quality. The Roman writers rise towards perfection according to that measure of simplicity which they mingle in their works; though indeed they are all inferior to the Greek models. Lucretius, Horace, Virgil, Livy, Terence, Tully, Tacitus, are at once the simplest and best Roman writers. This one circumstance has raised the venerable Dante above the succeeding poets of his country, who could never long maintain the local and temporary honors bestowed upon them; but have fallen under that just neglect, which time will ever decree to those who desert a just simplicity for the florid colorings of style, contrasted phrases, affected conceits, the mere trappings of composition and Gothic minutiæ. This has given to Boileau the most lasting wreath in France, and to Shakspeare and Milton in England; especially to the former, whose writings contain specimens of perhaps the purest and simplest English that is any where to be found, except in the Bible. As simplicity is the only universal characteristic of just writing, so the superior eminence of the sacred Scriptures in this quality has been generally acknowledged. Longinus, one of the greatest critics in antiquity, himself conspicuous in the sublime and simple manner, has borne this testimony to the writings of Moses and St. Paul. It has been observed by some writers that the ‘Scriptures suffer in their credit by the disadvantage of a literal version, while other ancient writers enjoy the advantage of a free and embellished translation.’ But the truth is, ‘that most other writings are impaired by a literal translation; whereas, giving only a due regard to the idiom of different languages, the sacred writings, when literally translated, are then in their full perfection.’ This is an internal proof that in all other writings there is a mixture of local, relative, exterior ornament, which is often lost in the transfusion from one language to another. But the internal beauties which depend not on the particular construction of tongues, no change of tongue can destroy. Hence the Bible preserves

its native beauty and strength alike in every language, by the sole energy of unadorned phrase, natural images, weight of sentiment, and great simplicity. It is in this respect like a rich vein of gold, which, under the severest trials of heat, cold, and moisture, retains its original weight and splendor, without loss or alloy; while baser metals are corrupted by earth, air, water, fire, and assimilated to the various elements through which they pass. This circumstance, then, may justly be regarded as at once the excellence and security of the Scriptures. It is their excellence, as it renders them intelligible and useful to all; it is their security, as it prevents their being disguised by the false and capricious ornaments of vain or weak translators. We may appeal to experience for the confirmation of these remarks on the superior simplicity, utility, and excellence of the style of the Holy Scripture. No book in the world is so perfectly adapted to all capacities; or contains such sublime and exalted precepts, conveyed in such an artless and intelligible strain, that can be read with such pleasure and advantage by the lettered sage and the unlettered peasant.

As to simplicity in *painting* and *sculpture*, the great masters have sometimes produced works the composition of which is extremely rich, but only when the subject necessarily demanded such profusion. When Poussin painted the gathering of manna by the Israelites in the desert, he could not limit himself to a small number of figures. But often, in the finest specimens of pictorial art, a single group, composed of four or five figures, is found sufficient to tell an interesting story, and to display the most consummate ability in the artist. In order to attain this most desirable quality, the artist should take care to propose to himself one great aim, one principal point de vue, to which every thing else should be subordinate. The grand style presupposes simplicity in all its parts:—in subject, in forms, in attitudes, in composition, in ordonnance, in accessories, &c. It presupposes also a great mind in him who practises—a high taste in him who appreciates and applauds it.

On simplicity in painting we may read with advantage the second of Hagedorn’s *Considérations sur la Peinture*. On simplicity in architecture we may consult the third book of the first volume of the *Principes de l’Architecture Civile*, by Milizia.

**SIMPLICIUS**, an ancient philosopher, born in Silicia, or, as Dr. Watkins says, in Phrygia, in the end of the fifth century. He was a follower of Ammonius, and like him a firm adherent to Paganism. He was one of those, who, thinking themselves not safe under Justinian, went with Areobindus to Cosroes, king of Persia; but, he not answering their expectation, they returned to Athens, A. D. 549, after stipulating for liberty to adhere to the religion of their ancestors. He was a professor of the peripatetic philosophy, and wrote commentaries upon Aristotle’s works, some of which are lost; but of all that are extant none is more highly valued than his Commentary upon Epictetus; which has been often printed in Greek and Latin. His whole works were published at Leyden, in 1640. He died about 560.

**SIMPLICIUS** (St.), pope of Rome, was born at Tivoli, went through the usual clerical education and gradation of offices in the church; and was at last, on the death of pope Hilary, elected into the pontifical chair, A. D. 468. He was very learned for the age he lived in; and eighteen of his letters have been published and esteemed. He died in 483, and was succeeded by Felix III.

**SIMPION,** or **SIMPELN**, the great Alpine barrier which separates the south of Switzerland from the Piedmontese territory. The old road across being impracticable for heavy carriages, a new one was formed at the joint expense of France and the kingdom of Italy, in the reign of Buonaparte. It was a work of great labor, and occupied several years; to avoid steepness of ascent, it was made more circuitous than heretofore; and from the small town of Glis, or Glys, near Brieg, where it begins, to Domo d'Ossola on the Italian side, where it ends, the distance is about thirty-six English miles, which may be travelled in eleven hours with a change of horses, or in fifteen hours allowing an interval for rest. The breadth of the road is no where less than twenty-five feet, and parapets are erected along the brink of the precipices, around which it winds. The hazard, particularly in spring, is from the occasional descent of avalanches. From this cause, and from the masses of earth and stone detached from the high grounds after heavy rains, the road is exposed to periodical injury, and an expense of from £2000 to £3000 a-year is necessary to keep it in repair. It forms the usual access to the central part of Lombardy, in the same manner as Mont Cenis to the west of Piedmont. The scenery is awful, and the road goes through no less than six galleries or passages, cut through the superimpending rocks. The highest point of the road is nearly 6000 feet above the level of the sea, and the top of the mountain is seen rising 5000 feet above this.

**SIMPSON** (John), M. A., a learned Scottish professor, born near Dumfries, in 1677, and educated at the University of Glasgow, where he graduated. He was afterwards appointed professor of divinity in that university; but having published some tracts wherein he ventured to inculcate opinions different from those of the established church, respecting the doctrine of the Trinity, he was, after a legal process of ten years before the various judicatories of the church, at last formally deposed and excommunicated by the venerable assembly. The late queen Caroline, considering him as a sufferer for matters of principle and conscience, exerted herself so zealously in his favor, that a pension, equal to his former salary, was settled upon him for life. He died at Edinburgh in 1744.

**SIMPSON** (Thomas), F. R. S., professor of mathematics at the Royal Academy at Woolwich, and member of the Royal Academy at Stockholm, was born at Market Bosworth in Leicestershire, in 1710. His father, a stuff weaver, taught him only to read English, and brought him up to his own business; but meeting with a scientific pedlar, who likewise practised fortunetelling, young Simpson, by his assistance and advice, left off weaving, and professed astrology.

As he improved in knowledge, however, he grew disgusted with his pretended art; and, renouncing it, was driven to such difficulties for the subsistence of his family that he went to London, where he worked as a weaver, and taught mathematics at his spare hours. As his scholars increased, his abilities became better known, and he published his Treatise on Fluxions, by subscription, in 1737; in 1740 he published his Treatise on the Nature and Laws of Chance; and Essays on Speculative and Mixed Mathematics. After these appeared his doctrine of Annuities and Reversions; Mathematical Dissertations; Treatise on Algebra; Elements of Geometry; Trigonometry, Plane and Spherical; Select Exercises; and his Doctrine and Application of Fluxions. In 1743 he obtained the mathematical professorship at Woolwich academy; and soon after was chosen F. R. S. In teaching he had a dignity and perspicuity, tempered with such mildness, as engaged the attention and friendship of his scholars, and gained applause from his superiors. His application and close confinement, however, injured his health; his spirits sunk gradually, till he became incapable of reading the letters of his friends. At length his physicians advised his native air for his recovery, and he set out in February 1761; but was so fatigued, that upon his arrival at Bosworth, he grew continually worse till he died, May 14th, aged fifty-one.

**SIMSON** (Dr. Robert), professor of mathematics in the university of Glasgow, was born in 1687, of a respectable family, which had held a small estate in the county of Lanark for some generations. He was the second son. He was educated in the university of Glasgow, under some of his relations, and soon became an adept in the philosophy and theology of the schools, in the oriental languages, and in botanical and historical knowledge. During his theological studies, mathematics engaged his fancy. When tired with speculations, in which he did not meet with certainty to reward his labors, he had recourse to mathematics which never failed to refresh him. At last a prospect began to open of making them his profession. He preferred the ancient method of studying pure geometry, and even felt a dislike to the Cartesian method of substituting symbols for operations of the mind, and still more to their substitution for the very objects of discussion, for lines, surfaces, solids, and their affections. He was rather disposed, in the solution of an algebraic problem, where quantity alone was considered, to substitute figure and its affections for the algebraic symbols, and to convert the algebraic formulae into an analogous geometrical theorem. And he came at last to consider algebraic analysis as little better than a kind of mechanical knack, in which we proceed without ideas of any kind, and obtain a result without meaning, and without being conscious of any process of reasoning, and therefore without any conviction of its truth. And surely, if genuine unsophisticated taste alone is to be consulted, Dr. Simson was in the right: for, though the reasoning in algebra is as strict as in the purest geometry of Euclid or Apollonius, the expert analyst has little perception of it.

as he goes on, and his final equation is not felt by himself as the result of ratiocination, any more than if he had obtained it by Pascal's arithmetical mill. Such, however, was the strong bias of Dr. Simson to the analysis of the ancient geometers. It increased as he went forward; and his veneration for the ancient geometry was carried to a degree of idolatry. His chief labors were exerted in efforts to restore the works of the ancient geometers; and he bestowed little pains upon modern discoveries. The noble inventions of fluxions and logarithms attracted the notice of Dr. Simson; but he contented himself with demonstrating their truth on the genuine principles of the ancient geometry. About the age of twenty-five Dr. Simson was chosen regius professor of mathematics in the university of Glasgow. He went to London immediately after, and there formed an acquaintance with the most eminent men of that bright era of British science. Among these he always mentioned Dr. Halley with particular respect. He also admired the wide and masterly steps which Newton took in his investigations. He often remarked, 'That the thirty-ninth proposition of the first book of the Principia was the most important proposition that had ever been exhibited to the physico-mathematical philosopher;' and he used to illustrate the superiority of the geometrical over the algebraic analysis, by comparing the solution given by Newton of the inverse problem of centripetal forces in the forty-second proposition of that book with the one given by John Bernoulli in the Memoirs of the Academy of Sciences at Paris for 1713. Turning to his academical chair, Dr. Simson discharged the duties of a professor for more than fifty years. In his predilections he followed strictly the Euclidian method in elementary geometry. He made use of Theodosius as an introduction to spherical trigonometry. In the higher geometry he prelected from his own Conics; and he gave a specimen of the linear problems of the ancients, by explaining the properties of the conchoid and the cissoid, with their proper application. In the advanced class he gave Napier's mode of conceiving logarithms, i. e. quantities as generated by motion; and Mr. Cotes's view of them, as the sums of ratiunculae; demonstrated Newton's lemmas on the limits of ratios; then gave the elements of the fluxionary calculus; and finished his course with select propositions in optics, gnomonics, and central forces. His method of teaching was simple and perspicuous, and his manner impressive. He had the affection of his scholars. He said that it was owing to Dr. Halley, who gave him a copy of Pappus with his own notes, that he so early directed his efforts to the restoration of the ancient geometers. The perspicuity of the ancient geometrical analysis, and the elegance of the solutions it affords, especially by the loci theorems, took hold of his fancy, and made him direct his efforts to the recovery of this *in toto*; and the restoration of Euclid's Porisms was the first task which he set himself. The accomplished geometer knows what a desperate task this was, from the scanty and mutilated account which we have of this work in a single passage of Pappus,

See PORISM. He succeeded; and so early as 1718 seemed to have been in complete possession of this method. He gave a specimen of his discovery in 1723, in the Philosophical Transactions. Having thus gained his favorite point, he turned his attention to the more ancient geometers. The loci plani of Apollonius he completed about 1738; but, after it was printed, he imagined that he had not given the ipsissima propositions of Apollonius, and it was with great reluctance that he yielded to the intreaties of his friends, and published the work in 1736 as the restitution of Apollonius. He had published his Conic Sections, a work of uncommon merit, whether considered as a complete restitution of the work of Apollonius Pergaeus, or not. Much about this time Dr. Simson seriously began to prepare his edition of Euclid's Elements. The intimate acquaintance he had now acquired with all the original works of the ancient geometers, and their ancient commentators and critics, encouraged him to hope that he could restore to his original lustre this leader in mathematical science; and the errors which had crept into this celebrated work, and which still remained in it, appeared of magnitude sufficient to merit the most careful efforts for their removal. The Data also of Euclid had fortunately been preserved, but the book was neglected, and the only ancient copies, which are but three or four, are miserably erroneous. Dr. Simson made it a joint task with the elements. All the lovers of true geometry will acknowledge their obligations to him for the edition of the Elements and Data which he published about 1758. The text is corrected with the most judicious and scrupulous care, and the notes are inestimable. The accomplished reader will perhaps smile at the axiom which seems to pervade the notes, 'that a work of Euclid must be supposed without error or defect.' If this was not the case, Euclid has been obliged to his editor in more instances than one. There is another work of Apollonius on which Dr. Simson bestowed great pains, and restored omnibus numeris perfectum, viz. the Sectio determinata; one of those performances which are of indispensable use in the application of the ancient analysis. This also seems to have been an early task. It did not appear till after his death, being then published along with the great work, the Porisms of Euclid, at the expense of the late earl Stanhope, a nobleman intimately conversant with the ancient geometry, and who had kept up a constant correspondence with the doctor on mathematical subjects; and at his death, in 1768, engaged professor Clow, to whose care the doctor had left all his valuable papers, to make a selection of such as would serve to support and increase his reputation as the restorer of ancient geometry. Dr. Simson's supposition, that Euclid's original work was a perfect work, has very probably made the doctor fail of his anxious purpose, and give us even a better than the original. His admiration of the ancient analysis is the prominent feature of his literary character. Yet Dr. Simson's predilection for the geometrical analysis of the ancients did not so far mislead him as to make him neglect the symbolical analysis of the present times; on the

contrary, he was completely master of it, and frequently employed it. He spoke in high terms of the analytical works of Mr. Cotes, and of the Bernouillis, as well as of an improvement of the infinitesimal calculus by D'Alembert and De la Grange.

That Dr. Simson was master of this calculus, in general, appears from two valuable dissertations in his posthumous works; the one on logarithms, and the other on the limits of ratios. Having never married, he lived entirely a college life; and thus, instead of the commodious house to which his place in the university entitled him, he contented himself with chambers, good indeed, and spacious enough, but without any decoration. His official servant sufficed for valet, footman, and chambermaid. As this retirement was devoted to study, he entertained no company, but in a neighbouring house, where his apartment was sacred to him and his guests. Retired from promiscuous intercourse, he contented himself with a small society of intimate friends, with whom he could lay aside every restraint, and indulge in all the innocent frivolities of life. Every Friday evening was spent in a party at whist, in which he excelled. The card-party was followed by an hour or two of playful conversation. Every Saturday he had a less select party to dinner at a house about a mile from town. The doctor's long life enabled him to see the *dramatis personæ* of this little theatre several times completely changed, while he continued to give it a personal identity: so that it became, as it were, his own house; and he, as its father and head, was respected and beloved by all. He never exerted his presidial authority, unless to check some infringement of good breeding, religion, or purity of manners; for these he had the highest reverence. Having a fine voice, and most accurate ear, he sometimes sung some lines of a Latin hymn to the divine geometer, with a kind of celestial rapture. Dr. Simson was of an advantageous stature, with a fine countenance; and, even in his old age, had a graceful carriage, and always, except when in mourning, dressed in white cloth. He was of a cheerful and affable disposition; and strangers were at perfect ease in his company. He enjoyed a long course of uninterrupted health, and died in 1768, aged eighty-one. He left to the university his valuable library, which is considered as the most choice collection of mathematical books and MSS. in the kingdom, rendered doubly valuable by Dr. Simson's notes.

SIMSON (professor), a younger brother of the learned Dr. R. Simson. This gentleman was professor of medicine in the university of St. Andrew's, and is famed for some works of reputation; particularly a Dissertation on the Nervous System, occasioned by the Dissection of a Brain completely Ossified.

SIMUL CUM (together with), in English law, words used in indictments and declarations of trespass against several persons, where some of them are known, and others not known: as, the plaintiff declares against A. B. the defendant, together with C. D., E. F., and divers others unknown, for that they committed such a trespass, &c. 2 Lil. Abr. 469. If a writ is generally against two or more persons, the plaintiff may

declare against one of them, with a *simul cum*, but if a man bring an original writ against one only, and declares with a *simul cum*, he abates his own writ. Comber. 260.

SIM'ULAR, *n. s.* Lat. *simulo*. One that counterfeits. Obsolete.

Hide thee, thou bloody hand,  
Thou perjuror, thou *simular* of virtue,  
That art incestuous. *Shakspeare. King Lear.*

SIMULATION, *n. s.* Fr. *simulation*; Lat. *simulatio*. That species of hypocrisy which pretends that to be which is not.

*Simulation* is a vice rising of a natural falseness, or fearfulness; or of a mind that hath some main faults; which, because a man must needs disguise, it maketh him practise *simulation*. *Bacon.*

For the unquestionable virtues of her person and mind, he well expressed his love in an act and time of no *simulation* towards his end, bequeathing her all his mansion-houses, and a power to dispose of his whole personal estate. *Wotton.*

For distinction sake, a deceiving by word is commonly called a *lie*; and deceiving by actions, gestures, or behaviour, is called *simulation* or *hypocrisy*. *South.*

SIMULTA'NEOUS, *adj.* Lat. *simultaneus*. Acting together; existing at the same time.

If the parts may all change places at the same time, without any respect of priority or posteriority to each other's motion, why may not bullets, closely crowded in a box, move by a like mutual and *simultaneous* exchange? *Glanville.*

SIMULUS, an ancient Latin poet, who wrote a poem on the Tarpeian rock. *Plut. in Rom.*

SIMYRA, an ancient town of Phoenicia.

SIN, *n. s.* } Sax. *syn*; Goth. *synia*.

SINTU, *adj.* } An act against or in con-

SINTU'LITY, *adj.* tempt of the laws of God.

SINTU'NESS, *n. s.* See below. Used by

SINLESS, *adj.* Shakspeare for a very

SINLESSNESS, *n. s.* wicked man: to sin is so

SIN'NER, } to act; to offend against

right: the derivatives all corresponding.

The flesh of the bullock shalt thou burn without the camp: it is a *sin offering*. *Ex. xxix. 14.*

Stand in awe and *sin not*. *Psalm iv. 14.*

He shall ask, and he shall give him life for them that *sin not* unto death. *1 John. v. 16.*

Thrice happy man, said then the father grave,  
Whose staggering steps thy steady hand doth lead,

And shews the way his *sinful* soul to save,  
Who better can the way to heaven read?

*Faerie Queene.*

All this from my remembrance brutish wrath

*Sinfully* plucked, and not a man of you  
Had so much grace to put it in my mind.

*Shakspeare. Richard III.*

Here's that which is too weak to be a *sinner*,  
honest water, which never left man i' th' mire.

*Id. Timon.*

It is great *sin* to swear unto a *sin*,  
But greater *sin* to keep a *sinful* oath. *Shakspeare.*

But those that sleep, and think not on their *sins*,  
Pinch them. *Id. Merry Wives of Windsor.*

Thy ambition,

Thou scarlet *sin*, robb'd this bewailing land  
Of noble Buckingham. *Id. Henry VIII.*

I am a man

More *sinned* against than *sining*. *Shakspeare.*

Light from her thought, a summer's careless robe,  
Tell each affection of this *sin-worn* globe. *Brooke.*

Is there no means, but that a *sin*-sick land  
Should be let blood with such a boisterous hand ?

*Daniel.*

Dishonest shame  
Of nature's works : honour dishonourable,  
*Sin*-bred, how have ye troubled all mankind !

*Milton.*

Nature herself, though pure of *sinful* thought,  
Wrought in her so, that seeing me, she turned. *Id.*

I am sent

To shew thee what shall come in future days  
To thee, and to thy offspring : good with bad  
Expect to hear ; supernal grace contending  
With *sinfulness* of men. *Id.*

Infernal ghosts and hellish furies round  
Environed thee ; some howled, some yelled, some  
shrieked,  
Some bent at thee their fiery darts, while thou  
Sat'st unpallied in calm and *sinless* peace. *Id.*

We may the less admire at his gracious condescensions to those, the *sinlessness* of whose condition will keep them from turning his vouchsafements into any thing but occasions of joy and gratitude.

*Boyle's Seraphick Love.*

No thoughts like mine his *sinless* soul profane,  
Observant of the right. *Dryden's Ovid.*

Over the guilty then the fury shakes  
The sounding whip, and brandishes her snakes,  
And the pale *sinner* with her sisters takes. *Dryden.*

The Stoicks looked upon all passions as *sinful* defects and irregularities, as so many deviations from right reason, making passion to be only another word for perturbation. *South.*

The humble and contented man pleases himself innocently and easily, while the ambitious man attempts to please others *sinfully* and difficultly, and perhaps unsuccessfully too. *Id.*

Let the boldest *sinner* take this one consideration along with him when he is going to *sin*, that whether the *sin* he is about to act ever come to be pardoned or no, yet, as soon as it is acted, it quite turns the balance, puts his salvation upon the venture, and makes it ten to one odds against him. *Id.*

Did God, indeed, insist on a *sinless* and unerring observance of all this multiplicity of duties, had the Christian dispensation provided no remedy for our lapses, we might cry out with Balaam, Alas ! who should live, if God did this ? *Rogers.*

Peevishness, the general fault of sick persons, is equally to be avoided for the folly and *sinfulness*.

*Wake.*

Whether the charmer *sinner* it or saint it,  
If folly grows romantick, I must paint it. *Pope.*

And who but wishes to invert the laws  
Of order, *sins* against the eternal cause.

*Id. Essay on Man.*

Vice or virtue chiefly imply the relation of our actions to men in this world ; *sin* and holiness rather imply their relation to God and the other world.

*Wat's Logic.*

Sad waste ! for which no after thirst atones ;  
The grave admits no cure for guilt or *sin* ;  
Dewdrops may deck the turf that hides the bones,  
But tears of godly grief ne'er flow within.

*Cowper.*

Never consider yourselves as persons that are to be seen, admired, and courted by men ; but as poor *sinners*, that are to save yourselves from the vanities and follies of a miserable world, by humility, devotion, and self-denial. *Law.*

**SIN**, in theology, has been defined to be any want of conformity to the law of God, and under this definition are comprehended both the sins of omission and of commission. Plato defines sin to

be something void, both of number and measure; by way of contradiction to virtue, which he makes to consist in musical numbers ! Simplicius, and after him the schoolmen, assert that evil is not any positive thing, contrary to good; but a mere defect and accident. Sins are distinguished into original and actual.

**Original sin** has been divided by some divines into inherent and imputed : the former term being used to denote that corruption or degeneracy of nature which is said to be propagated by the laws of generation from the first man to all his offspring, by reason of which man is utterly indisposed, disabled, and made opposite unto all that is spiritually good, and wholly inclined to all evil, and that continually. Hence, it is said, proceed all actual transgressions. The general cause and ground of this propagation of a sinful nature are referred originally to man's common interest in the guilt or condemnation of Adam's first sin; but the manner in which this hereditary corruption is conveyed is not particularly explained, though some have supposed that it may result from the constitution of the body, and the dependence of the mind upon it. Malebranche accounts for it from men at this day retaining in the brain all the traces and impressions of their first parents ! All animals, he argues, produce their like, and with like traces in the brain ; whence it is that animals of the same kind have the same sympathies and antipathies, and do the same things on the same occasions ; and our first parents, after their transgression, received such deep traces in the brain by the impression of sensible objects, that it was very possible they might communicate them to their children. Now as it is necessary, according to the order established by nature, that the thoughts of the soul be conformable to the traces in the brain, it may be said that, as soon as we are formed in the womb, we are infected with the corruption of our parents ; for, having traces in the brain like those of the persons who gave us being, it is necessary we have the same thoughts, and the same inclinations, with regard to sensible objects. Thus, of course, we must be born with concupiscence and original sin. With concupiscence, if that be nothing but the natural effort the traces of the brain make on the mind to attach it to sensible things ; and with original sin, if that be nothing but the prevalence of concupiscence ; nothing, in reality, but these effects considered as victorious, and as masters of the mind and heart of the child.

Imputed original sin denotes that guilt or obligation to punishment to which all the posterity of Adam are subject by the imputation of his transgression. This is called the guilt of Adam's first sin, in which the sinfulness of that state into which man fell, is said partly to consist ; and it is denominated original sin, in order to distinguish it from actual sin, or personal guilt. This doctrine of imputed guilt has been explained and vindicated by supposing a covenant made with Adam (called by divines the covenant of works,) as a public person, not for himself only, but for his posterity, in consequence of which he became the federal head, surety, or representative of all mankind.

and they, descending from him by ordinary generation, sinned in him, and fell with him, in his first transgression. It has been debated how far the imputation of Adam's sin reaches: some have maintained that it extends to final condemnation, and eternal misery: others have suggested that the sin of Adam has subjected his posterity to an utter extinction of being; so that all who die in their infancy fall into a state of annihilation, excepting those who are the seed of God's people, who, by virtue of the blessings of the covenant made with Abraham, and the promise to the seed of the righteous, shall, through the grace and power of Christ, obtain a part in a happy resurrection, in which other infants shall have no share. It seems best to acknowledge, says Dr. Doddridge, that we know nothing certain concerning the state of infants, and therefore can assert nothing positively; but that they are in the hands of a merciful God, who, as he cannot consistently with justice and truth give them a sense of guilt for an action they never committed, so probably will not hold their souls in being merely to make them sensible of pain for the guilt of a remote ancestor, their existence in a state of everlasting insensibility (which was Dr. Ridgley's scheme) seems hardly intelligible; we must, therefore, either fall in with the above-mentioned hypothesis, or suppose them all to have a part in the resurrection to glory, which seems to put them all on a level, without a due distinction in favor of the seed of believers; or else must suppose they go through some new state of trial, concerning which the Scripture is wholly silent. Such is the doctrine of original sin, both inherent and imputed, as some divines, eminent as scholars and theologians, have stated it. In proof of their view of the depravity of human nature they have appealed to observation and experience, and referred to a variety of texts of Scripture, in which, according to their ideas of them, it is either implied or expressed. Those who maintain that the sin of Adam is imputed to all who descend from him in the way of ordinary generation, allege, in proof of this opinion, that we are all born with such constitutions as will produce some evil inclinations, which we probably should not have had in our original state; which evil inclinations are represented in Scripture as derived from our parents, and therefore may be ultimately traced up to the first sinful parents from whom we descended;—that infants are plainly liable to diseases and death, though they have not committed any personal transgression, which, while they cannot know the law, it seems impossible they should be capable of (Rom. v. 12—14);—that the seeds of diseases and death were undoubtedly derived to children from their immediate parents, and from them may be traced up to the first diseased and mortal parent, i. e. Adam;—that the Scripture teaches us to consider Adam as having brought a sentence of death upon his whole race, and expressly says that many were constituted sinners, i. e. on account of it are treated as such (1 Cor. xv. 22; Rom. v. 12—19);—that the sin of Adam brought upon himself depraved inclinations, an impaired constitution, and at length death;—and there is no reason to believe that if man had continued in a state of innocence his

offspring would have been thus corrupt, and thus calamitous from their birth. Hence it has been inferred that the covenant was made with Adam, not only for himself, but in some measure for his posterity; so that he was to be considered as the great head and representative of all that were to descend from him. On the other hand, many divines have disputed the validity of the arguments alleged in proof of the doctrine of original sin; and whilst some of them have disowned the doctrine in toto, as irrational and unscriptural, others have allowed that part of it which comprehends the depravity of the human species, but have rejected the imputation of Adam's sin to his posterity.

Limburch, rejecting and refuting the imputation of Adam's sin, acknowledges that men are now born less pure than Adam was created, and with a certain inclination to sin; but this inclination cannot properly be called sin, or a habit of sin propagated to them from Adam; but merely an inclination to esteem and pursue what is agreeable to the flesh, arising from the bodily constitution transmitted to them by their parents. Inclinations and appetites of this kind, being most agreeable to the flesh, are contrary to the divine will, as God, by prohibiting them, tries the readiness of our obedience, and of course these inclinations are inclinations to sin. But if it be asked, says this author, whether there be in human nature a certain original corruption or habit of sin propagated from Adam to his posterity, which may truly and properly be called sin, by which the understanding, and will, and all the affections are so depraved that they are inclined only to evil, and that all mankind are by nature subject to the wrath of God, such kind of corruption is consistent neither with Scripture nor with right reason. The Scripture, he says, teaches no such doctrine as that which charges infants with a moral corruption that is truly and properly sin. See Deut. i. 39; Jonah iv. 11; Rom. ix. 11. Our Saviour recommends it to his disciples to be as little children. See also 1 Cor. xiv. 20. This notion, says Limburch, is contrary to the justice of God, who would not punish men with this moral corruption, from which all actual sins proceed, and which leads to future perdition and misery. God cannot be the author of sin. Besides it cannot be conceived how this sin can be propagated; it cannot belong to the mind, which proceeds immediately from God; nor can it exist in the body, which is incapable of sin. But, as diseases may be propagated, so may a peculiar temperament or constitution, and together with this an inclination to certain objects, which, immoderately indulged, may become sinful, but is not sinful in itself. Moreover, no sin is liable to punishment which is involuntary; but original corruption is involuntary. Limburch explains many texts, and refutes many arguments, urged by the advocates of original sin. Another writer (Dr. Taylor), who has taken a lead in this controversy on the same side of the question, proceeds, in the examination of the doctrine of original sin, upon the same plan with Dr. Clarke in his 'Scripture Doctrine of the Trinity,' by citing and explaining all those passages of Scripture which expressly speak of the consequences of the first transgression.

He observes that the consequences of the first transgression are spoken of certainly and plainly but five times in the whole Bible, twice in the Old, and thrice in the New Testament. The first passage is Gen. ii. 17. In this passage, he says, death is opposed to life, and must be so understood. But not one word occurs in this text relating to Adam's posterity. 2. The consequences of the transgression of Adam and Eve are related in Gen. iii. from the seventh verse to the end of the chapter. The natural consequences were shame and fear, the common effects of guilt, which was personal, and could belong only to themselves. The judicial consequences pertained either to the serpent, the woman, or the man. As far as they relate to the man, Adam became obnoxious to death, which, as our author conceives, was death in law, or eternal death; and, if the law had been immediately executed, his posterity then included in his loins must have been extinct. But it is alleged that there is not a word of a curse upon the souls of our first parents, i. e. upon the powers of their minds; nor does the least intimation occur with respect to any other death, besides that dissolution which all mankind undergo, when they cease to live in this world. It is also observed that we, their posterity, are in fact subject to the same afflictions and mortality here inflicted by sentence upon our first parents; but they are not inflicted as punishments for their sin, because punishment includes guilt; but we neither are, nor in the nature of things could be, guilty of their sin. We may suffer by their sin, and actually do suffer by it; but we are not punished for their sin, because we are not guilty of it; and this suffering is eventually a good. Accordingly it appears evident in our world, that the increase of natural evil (at least in some degree) is the lessening of moral evil. 3. The third text occurs in the New Testament, viz. 1 Cor. xv. 21, 22. Here it is said, the death from which all mankind shall be released at the resurrection, is the only death that came upon all men in consequence of Adam's sin; that as all men die, all men are mortal; all lose their life in Adam, and from him our mortality commences; and it is equally undeniable that by Christ came the resurrection of the dead. From this place we cannot conclude, says our author, that any other evil or death came upon mankind in consequence of Adam's first transgression, besides that death from which all mankind shall be delivered at the resurrection, whatever that death be. 4. The most difficult passage is that which occurs in Rom. v. 12—19. A popular advocate of the doctrine of original sin (Dr. Watts) thinks that Adam's being a federal head, and our deriving a sinful nature from him, may be collected from this text. In this passage our author apprehends that the apostle is speaking of that death which takes place with regard to all mankind, when the present life is extinguished; and that by judgment to condemnation, or a judicial act of condemnation, the apostle means the being adjudged to the fore-mentioned death. The words, 'as by one man's disobedience many were made sinners,' are (says Dr. Taylor) of the same signification with those in the foregoing

verse, 'as by the offence of one judgment came upon all men to condemnation'; and therefore they mean nothing more nor less than that by one man's disobedience the many, that is, mankind, were made subject to death by the judicial act of God. The apostle, being a Jew, was well acquainted with the idiom of the Hebrew language; and, according to that language, 'being made sinners' may very well signify being adjudged or condemned to death. See Exod. xxii. 9; Deut. xxv. 1; 1 Kings, viii. 32; Job, ix. 20. x. 2, xxxvii. 3, xxxiv. 17, xl. 8; Ps. xxxvii. 33, xciv. 21; Prov. xvii. 15; Is. l. 9, liv. 17. In the Greek text it is not *εγενοντο*, became sinners but *κατεστηματων*, were constituted sinners; viz. by the will and appointment of the judge. Besides, it is here expressly said that the many, i. e. mankind, are made sinners, not by their own disobedience, but by the disobedience of another man; and therefore they can be sinners in no other way than as they are sufferers. Upon the whole, our author thinks it plain that 'by one man's disobedience many were made sinners,' means that by Adam's offence, the many, i. e. mankind, were made subject to death by the judgment of God. In this passage there is an evident contrast or comparison between something which Adam did and its consequences, and something which Christ did and the consequences of that: by the former the many, i. e. all men, are brought into condemnation; and by the latter, all men are justified unto life. The whole of the apostle's argument and assertion are supposed by our author to rest upon two principles; viz. that it is by the one offence of Adam that death passed upon all men, and not by their own personal sins; and again, that it is by the obedience of one, or the one act of Christ's obedience (in his sufferings and death upon the cross), that all men are justified unto life, and not by their own personal righteousness. He adds, that throughout the whole paragraph, the apostle says nothing of any federal relations or transactions either on the part of Adam or Christ, nor of our deriving a sinful nature from Adam. 5. The text 1 Tim. ii. 14 declares a fact, with regard to Eve, which needs no explanation.

Dr. Taylor, in the second part of his book, proceeds to examine other passages of Scripture, which some divines have applied to original sin. We shall here select two or three of the principal, that our readers may be able to form a judgment for themselves; one is Ephes. ii. 3, 'and were by nature the children of wrath, even as others.' The apostle, our author apprehends, cannot mean that they were liable to divine wrath or punishment by that nature which they brought into the world at their birth. For this nature, whatever infirmities belong to it, is no other than God's own work or gift; and he thinks that to assert that the nature which God gives us is the hateful object of his wrath, is little less than blasphemy against our good and bountiful Creator. In his address to the Ephesians, the apostle is not speaking of their nature, or the natural constitution of their souls and bodies, as they came into the world, but evidently of the vicious course of life they had led among the Gentiles. Nature frequently signifies an acquired nature which

men bring upon themselves by contracting either good or bad habits. Besides, by nature may here signify really, properly, truly; for *τέκνα*, children, strictly signify the genuine children of parents by natural generation; and figuratively the word denotes relation to a person or thing by way of friendship, regard, imitation, obligation, &c.; so that 'children of wrath' are those who are related to wrath, or liable to rejection or punishment. The Ephesians, as the apostle tells them, were *τέκνα φυσει*, natural genuine children of wrath, not by natural birth, or the natural constitution of their bodies or souls, but they were related to wrath in the highest and strictest sense, with regard to sin and disobedience:—Nature, in a metaphorical expression, signifying that they were really and truly children of wrath, i. e. stood in the strictest and closest relation to suffering. Another passage, sometimes referred to in connexion with this subject, viz. Rom. viii. 7, 8, contains not so much as a single word that can carry our minds to Adam, or any consequences of his sin upon us.

Gen. vi. 5, expresses the universal wickedness of the old world, but does not so much as intimate that our nature is corrupted in Adam; for the historian does not charge their sin in any way upon Adam, but upon themselves: and besides, Noah is exempted out of the number of the corrupt and profligate; but this could not have been the case if the alleged text is a good proof that by Adam's transgression the nature of all mankind is corrupted.

Ps. li. 5, 6, is another text which has been considered as of great importance in this controversy. 'I was shapen in iniquity, and in sin did my mother conceive me.' The word *הוֹלִלָתָנוּ*, which we translate shapen, signifies, says our author, to bring forth or bear. Is. li. 2; Prov. viii. 24, 25. Again, the word *תִמְחַנֵנִי*, conceived me, properly signifies warmed me; and the expression conveys the idea, not of his being conceived, but warmed, cherished, or nursed by his mother, after he was born. Accordingly, the verse is thus translated, 'Behold I was born in iniquity, and in sin did my mother nurse me;' which has no reference to the original formation of his constitution, but is a periphrasis for his being a sinner from the womb, and is as much as to say, in plain language, I am a great sinner; or I have contracted habits of sin. This, it is said, is a scriptural way of aggravating wickedness. See Ps. lviii. 3; Isaiah xlvi. 8. In the whole psalm there is not one word about Adam, or the effects of his transgression upon us. The psalmist is charging himself with his own sin. But if the words be taken in the literal sense of our version, then it is manifest that he chargeth not himself with his sin and wickedness, but some other person. But our limits will not allow of our enlarging farther. Dr. Taylor's hypothesis has been ably examined, and, as many divines think, successfully refuted, by the acute Jonathan Edwards on Original Sin.

SINĀ, an ancient people of India, reckoned by Ptolemy the most eastern nation in the world.

SINAI, a mountain of Arabia, near the head of the Red Sea, the spot celebrated in Scripture

history as that whence the Jewish law was given to Moses. It is situated in a vast desert, the few inhabited spots of which are occupied by hordes of Arabs, who render the road impassable, unless for a well defended caravan. The range to which Sinai belongs is called by the Arabs Jibbel Musa, and consists of several lofty summits, the valleys of which are composed of immense chasms, between rugged and precipitous rocks. At the foot of the mountain is the Greek convent of St. Catherine, founded in 1331 by William Bouldesell, and ever since affording hospitality to the few pilgrims who brave the perils of this road. It is situated on the slope of the mountain. The edifice is 120 feet in length, and almost as many in breadth, built of hewn stone, which, in such a desert, must have cost prodigious labor. The gate of entrance is never opened, unless on occasion of the visit of the archbishop. At all other times, men, as well as provisions, are introduced by a basket drawn up by a cord and pulley over the wall. The Arabs often fire upon the convent from the adjacent rocks we are told; and, when they find the monks without the walls, will refuse to release them without a considerable ransom. There is an excellent garden at a little distance, reached by a subterraneous passage, secured by iron gates. The climate is temperate here, and snow falls in winter. The interior of the convent presents little remarkable, except the church of the Transfiguration. It is eighty feet long, and fifty-three broad, paved with marble, adorned with a variety of figures: that event is represented in mosaic. There are many lamps of gold and silver, and the great altar is gilt over. The ascent of the mountain beyond the convent is steep, and rendered practicable only by steps cut in the rock, or loose stones piled. The traveller, after a short ascent, comes to a delightful spring of fresh water, a little above which is a chapel dedicated to the Virgin Mary. Higher up is shown the impression made by the foot of the camel on which Mahomet was carried up to heaven, under the guidance of Gabriel; but the Greeks acknowledge that this impression was made by themselves. The summit is marked by a Christian church and a Turkish mosque, the former of which was once much more extensive. It commands a most extensive view over the Red Sea and the opposite coast of the Thebais; immediately beneath being Tor, once the main channel by which the commodities of India were conveyed to Egypt. The descent is steep and rough, and terminates at the monastery of the Forty Saints, which has suffered much from the depredations of the Arabs. On the other side of it is the mountain of St. Catherine, still loftier than Sinai, 150 miles south-east of Suez.

SINAPIS, mustard, in botany, a genus of plants belonging to the class of tetradyamina, and to the order of siliquosa; and in the natural system ranged under the thirty-ninth order, siliquosa. The calyx consists of four expanding strap-shaped deciduous leaves; the unguis or bases of the petals are straight; two glandules between the shorter stamens and pistillum, also between the longer and the calyx. There are seventeen species:—1. S. alba; 2. allioni; 3. ar-

vensis; 4. brassicata; 5. cernua; 6. Chinensis; 7. erucoides; 8. Hispanica; 9. Japonica; 10. Incana; 11. Juncea; 12. laevigata; 13. millefolia; 14. nigra; 15. orientalis; 16. pubescens; and 17. Pyrenaica. Of these, three are natives of Britain; viz.

1. S. alba, white mustard, is generally cultivated as a salad herb for winter and spring use. This rises with a branched hairy stalk two feet high; the leaves are deeply jagged on their edges, and rough. The flowers are disposed in loose spikes at the end of the branches, standing upon horizontal foot-stalks; they have four yellow petals in form of a cross, which are succeeded by hairy pods, that end with long, compressed, oblique beaks; the pods generally contain four white seeds.

2. S. arvensis grows naturally on arable land in many parts of Britain. The seed of this is commonly sold under the title of Durham mustard seed. Of this there are two varieties, if not distinct species; the one with cut, the other with entire leaves. The stalks rise two feet high; the leaves are rough; in the one they are jagged like turnip-leaves; in the other they are long and entire. The flowers are yellow; the pods are turgid, angular, and have long beaks.

3. S. nigra, common mustard, which is frequently found growing naturally in many parts of Britain, but is also cultivated in fields for the seed, of which the sauce called mustard is made. This rises with a branching stalk four or five feet high; the lower leaves are large, rough, and very like those of turnip; the upper leaves are smaller and less jagged. The flowers are small, yellow, and grow in spiked clusters at the end of the branches; they have four petals placed in form of a cross, and are succeeded by smooth four-cornered pods. Mustard, by its acrimony and pungency, stimulates the solids, and attenuates viscid juices; and hence stands deservedly recommended for exciting appetite, assisting digestion, promoting the fluid secretions, and for the other purposes of the acrid plants called anti-scorbutic. It imparts its taste and smell in perfection to aqueous liquors, and by distillation with water yields an essential oil of great acrimony. To rectified spirit its seeds give out very little either of their smell or taste. Subjected to the press, they yield a considerable quantity of mild insipid oil, which is as free from acrimony as that of almonds. They are applied as an external stimulant to benumbed or paralytic limbs; to parts affected with fixed rheumatic pains; and to the soles of the feet, in the low stage of acute diseases, for raising the pulse: in this intention, a mixture of equal parts of the powdered seeds and crumb of bread, with the addition sometimes of a little bruised garlic, are made into a cataplasm with a sufficient quantity of vinegar.

SINAPISM (from *sinapis*), in pharmacy, an external medicine, in form of a cataplasm, composed chiefly of mustard seed pulverised, and other ingredients mentioned in the last article.

SINCAPORE, or SINGAPORE, a town and island in the Straits of Malacca, at the extremity of the peninsula of that name, upon which a British settlement was formed in 1819, under the direction of Sir Stamford Raffles, the lieute-

nant-governor of Bencoolen. The interior of the island is said to exhibit a succession of hills and dales covered with woods. The soil is fruitful, the water of good quality, and the temperature remarkably cool and healthy for a tropical region.

The town is, of course, but an infant settlement, but it is rapidly extending. It is built near the shore, the mercantile part extending along an inlet of the sea, which penetrates into the interior, and is nearly 300 feet wide at its mouth. The harbour is safe, easily approached, and well sheltered. Several mercantile houses of respectability are already established; and there seems every reason to believe that, if maintained on the footing of a free port, Sincapore will at no distant day become one of the greatest emporiums of the east. Its situation, in the centre, so to speak, of a vast archipelago, in a strait through which the vessels of various countries are constantly passing, and within a few days' sail of China, clearly points it out as well fitted to become the entrepot of an extensive commerce. 'The rapid rise of this important station,' says its founder, in a letter written in 1820, 'is, perhaps, without a parallel. When I hoisted the British flag, the population scarcely amounted to 200 souls; in three months the number was not less than 3000; and it now exceeds 10,000, principally Chinese. No less than 173 sail of vessels of different descriptions, principally native, arrived and sailed in the course of the first two months; and it already has become a commercial port of importance.'

The latest accounts with which we are acquainted are found in the Asiatic Journal for September, 1823 (No. 93, p. 245). It states in 1822 the tonnage was,

	EXPORTS.	Tons.
By ships . . . . .	Tons 51,076	66,968
By native vessels . . . . .	15,892	
	IMPORTS.	
By ships . . . . .	48,037	63,661
By native vessels . . . . .	15,624	
	Total tonnage	130,629
Number of vessels importing in 1822	1,593	
Ditto exporting ditto	1,733	
	Total	3,326
Value of imports in 1822.		Drs.
By ships . . . . . Dollars 2,597,975		3,610,206
By native vessels . . . . . 1,012,231		
Value of exports in 1822.		
By ships . . . . . 2,044,871		3,172,332
By native vessels . . . . . 1,127,461		
		6,782,538
Not included in official returns . . . . .		1,713,634
	Total dollars	8,496,172

SINCE, *adv.* & *prep.* Contracted from *sithence*, or *sith thence*, from Sax. *rīðe*. Because that; from the time that; before this: as a preposition, after.

Am not I thine ass, upon which thou hast ridden ever since I was thine unto this day?

About two years since, it so fell out, that he was brought to a great lady's house. *Sidney.*  
Spies held me in chace, that I was forced to wheel Three or four miles about; else had I, Sir, Half an hour since, brought my report.

*Shakspeare. Coriolanus.*  
A law was made no longer since than the twenty-eighth of Henry the Eighth.

*Darey's History of Ireland.*

He since the morning hour set out from heaven. *Milton.*

How many ages since has Virgil writ? *Roscommon.*

If such a man arise, I have a model by which he may build a nobler poem than any extant since the ancients. *Dryden.*

Since the clearest discoveries we have of other spirits, besides God and our own souls, are imparted by revelation, the information of them should be taken from thence. *Locke.*

Since truth and constancy are vain,  
Since neither love, nor sense of pain,  
Nor force of reason can persuade,  
Then let example be obeyed. *Granville.*

He is the most improved mind since you saw him that ever was. *Pope.*

**SINCERE', adj.** { Fr. *sincere*; Lat. *sin-*  
**SINCERE'LY, adv.** *cerus.* Unhurt; unin-  
**SINCER'E'NESS, n. s.** } jured; pure; unmin-  
**SINCER'ITY.** gled; hence honest; artless; uncorrupt: the adverb and noun substantive corresponding.

The purer and perfecter our religion is, the wiser effects it hath in them who stedfastly and sincerely embrace it. *Hooker.*

This top proud fellow,  
Whom from the flow of gall I name not, but  
From sincere motions by intelligence  
I do know to be corrupt. *Shakspeare. Henry VIII.*

That you may, fair lady,  
Perceive I speak sincerely, the king's majesty  
Does purpose honour to you. *Id.*

Nor troubled at these tidings from the earth,  
Which your sincerest care could not prevent;  
Foretold so lately what would come to pass,  
When first this tempter crossed the gulf from hell. *Milton.*

He tried a tough well chosen spear;  
The inviolable body stood sincere. *Dryden.*  
Pardon my tears, 'tis joy which bids them flow,  
A joy which never was sincere till now;  
That which my conquest gave I could not prize,  
Or 'twas imperfect, till I saw your eyes. *Id.*

Jesus Christ has purchased for us terms of reconciliation, who will accept of sincerity instead of perfection; but then this sincerity implies our honest endeavours to do our utmost. *Rogers.*

The pleasures of sense, beasts taste sincere and pure always, without mixture or alloy; without being distracted in the pursuit, or disquieted in the use of them. *Attterbury.*

Animal substances differ from vegetable, in that, being reduced to ashes, they are perfectly insipid, and in that there is no sincere acid in any animal juice. *Arbuthnot on Aliments.*

In English I would have all Gallicisms avoided, that our tongue may be sincere, and that we may keep to our own language. *Felton on the Clasicks.*

The more sincere you are, the better it will fare with you at the great day of account. In the mean while, give us leave to be sincere too, in condemning heartily what we heartily disapprove. *Waterland.*

In thy consort cease to fear a foe;  
For thee she feels sincerity of woe. *Pope's Odyssey.*

In your whole reasoning, keep your mind sincerely intent in the pursuit of truth. *Watts's Logick.*

Through the want of a sincere intention or pleasing God in all our actions, we fall into such irregularities of life as, by the ordinary means of grace, we should have power to avoid. *Lane.*

**SINCLAIR** (C. Gideon, baron), a Swedish general, who served in his youth in France, Prussia, and Saxony, and was subsequently engaged in various parts of Europe. He made himself known likewise by his writings and a profound acquaintance with military tactics. Among his works are Regulations for Infantry, still adopted in Sweden; and Military Institutions, or an elementary Treatise on Tactics, Deus Ponti, 1773, 3 vols. 8vo. Baron Sinclair died near Westeras, in Sweden, September 1st, 1803, aged seventy-three.

**SINDE**, or **SINDHU**, a considerable province of Hindostan, formerly included in that of Mooltan, and situated on both sides of the Indus, between 23° and 28° N. lat. The general boundaries, including Tatta, are Mooltan and Afghanistan on the north; Cutch and the sea to the south; on the east it has Ajmeer, the Sandy Desert, and Cutch; and on the west the sea, and the mountains of Baloochistan. In length it may be estimated at 300 miles, by eighty miles the average breadth, and is intersected in a diagonal line throughout its whole extent by the Indus.

On the north it adjoins the country of Behawat Khan, and the fort of Subzul. Proceeding from thence south, the country is possessed by an infinite number of petty chiefs, in general tributary to the amirs of Siude. The names of the principal districts on the east bank, proceeding from the north to the south, are Bhoongbaree, Durelee, Loherree, Khyrpoor, and Puhlance. The boundaries of these districts are, the Sandy Desert and the country of Jesselmere to the east. Further south are the fort of Deenghur, forty miles from Khyrpoor, the districts of Koondeeyam, Noushehree, Feroze, Puneeche, and Sudaya, Norudunya Kohinnee, Koohjur, Juncjee, Lakat, Shadapoor, Halakundy, Novejanee, Kakabegaree (through which flows a branch of the Indus), Nussurua, Ropa, and Nusserpoor, and the Tandee of Illahyar Khan, from which Jesselmere is distant about 160 miles to the eastward. Of these districts the Sandy Desert forms the eastern boundaries. At the Tandee of Illahyar Khan, the branch of the Indus named the Fulalee commences, and flows in a south-west direction to Seidpoor, when it rejoins the main stream, after forming the insular district of Killee, named also the Deahab, the hills of Jarree and Canja, the fort of Hyderabad, with Seidpoor and some other villages. On the eastern bank of the Fulalee is situated the district of Chuckurhalee.

The Goonie, a branch of the Fulalee, takes its rise near the village of Seidpoor; to the eastward of it is situated the district of Chachgam, which yielded, when possessed by the Calories, a revenue of four lacks of rupees, which is now reduced to two. Also the district of Koodara, villages of Buhna, Sayekpoor, Dholee, and the

district of Pulujar, and the islands of Wah and Alibukeer. These are bounded on the east by the Sandy Desert. The district of Khyrpoor is on a branch of the Goonee; the fort of Illyabad is ten miles distant, and Puttyghar forty miles distant from Khyrpoor. The fort of Parkur, situated on the borders of the Joudpoor territories, is 110 miles to the eastward of Hyderabad, Islampoor fifty miles from Khyrpoor, Alighur forty miles from Khyrpoor, and Shahgur, eighty miles from Khyrpoor. Americote, now belonging to Joudpoor; the districts of Majur Jamee and Kitee, a fort on the borders of the Sandy Desert; the districts of Doka, Behrampoor, Ameerpoor, and Bhoondea.

On the west bank of the Indus, Sindé is bounded on the north by the Shekarpoor district, of which a considerable portion of the southern quarter is held by the Sindé chiefs. Proceeding from thence south are the districts of Noushehra, Berkapoore, Khanua, Ladgoonee, Kumburgundee, Meil, Nalookshahpoor, Nalu-medu, Chandye, formerly included in the province of Chandokee, which province, during the government of the Calories, is said to have yielded a revenue of sixteen lacks of rupees, now reduced to four. The villages of Eesan had Hoojee, the small district of Janee Duny, and an island formed by the Naree, a branch of the main stream, containing the districts of Nuggen Bhagban, Khodabad, Wuchooliee, Jaintance, and Kurreempoor. The districts situated to the westward of the Naree are Kacha, Bhoobak, Jungar, Bazar; a hill, 100 miles from Corachie, besides numerous small villages, occupied by Baloochees, and other migratory tribes. The district of Tharn, from which Corachie is said to be sixty miles distant, is possessed by the Nomurdies, who have also half the district of Shal. The districts of Jurukhee, Sonda, and many smaller ones, are adjacent to Tatta. The Sita and its streams, and the Nusserpoor and Naree branches of the Indus, are said to be now dried up.

A great part of this province, lying to the westward of the confines where the monsoon ceases, is a barren and totally unproductive soil, from the absence of moisture. Easterly from the meridian of  $67^{\circ} 40'$ , the land near to the Indus appears capable of the highest degree of improvement; but to the northward of Tatta, and a small distance to the westward of that river, the country is mountainous, rocky, and thinly inhabited. In June and July the thermometer ranges from  $90^{\circ}$  to  $100^{\circ}$ , but the air in the northern parts of Sindé is so pure, and so much refreshed by the cooling breezes from the westward, that the heat is not excessive. About Hyderabad the climate is healthy, and the air, in the month of August, remarkably clear, the difference of refraction in astronomical observations being then scarcely perceptible.

The Indus, from Tatta to a branch called the Folically, has from two to two and a half fathoms of water; off Tatta it has three, four, and more frequently five fathoms, with a muddy bottom. The banks in the province about Hyderabad are in general well cultivated, except where the Amers have made enclosures to confine game; but

these are so numerous and extensive as to occupy many of the most valuable spots of land. In the month of August the Indus has generally two and three fathoms of water, but during the fair season it is dried up. The Goonee is much the same as the Folically, with respect to inhabitants and cultivation, but has less water on an average, being only from one fathom and a half to two fathoms. It is also much narrower, contracting in many places to thirty yards, and can only be termed navigable in the month of August.

The cultivation here depends on the periodical rains, and the process of irrigation by means of canals and water-courses. During the swelling of the river, grain and other seeds are raised; the remainder of the year is employed in the production of indigo, sugar-canées, huldee, &c., &c. Every beegah of land, watered by a canal or wheel, pays a revenue of from one rupee and a quarter to three rupees and a half to the government: one wheel is capable of watering sixteen beegahs. A duty of one rupee is also levied on each khunwar (120 lbs.) of grain reaped by the farmer.

The principal articles of home produce exported from Sindé are rice, ghee, hides, shark fins, pot-ash, salt-petre, asafetida, b'dellium, madda, frankincense, Tatta cloths, horses, indigo, oleaginous, and other seeds. Alum, musk, and horses, are imported from Moultan, and the countries to the northward for re-exportation. The other imports into Sindé are tin, iron, lead, steel, ivory, European manufactures, sandal and other scented woods, from the south of India: swords and carpets from Khorasan and Candahar; silk and other articles from the Persian Gulf. The Mooltany merchants settled in Sindé are the principal traders; and the wealthiest part of the community. The exports from Sindé to Bombay are shark fins and flesh, b'dellium, ghee, pot-ash, saltpetre, hides, oil of sesame, wheat, asafetida, mujeet, sirshif oil, raisins, almonds, coloring plants, pistachio flowers and nuts, shawls, cloths, mustard, wild saffron, black cumin seed from Kerman, white cumin seed, chintzes both from Sindé and Khorasan. The imports to Sindé from Bombay are white sugar, sugar-candy, steel, iron, tin, tutenague, lead, cochineal, betel nut, black pepper, dried cocoa nuts, vermillion, red lead, quicksilver, Bengal and China silks and cloths, cinnamon, cardamons, cloves, nutmeg, sandal wood, ginger, chinaware, pearls, aloes, and amuttas.

To Muscat are exported dressed leather, rice, wheat, sirshif oil, ghee, b'dellium, chintzes, and other cloths. The imports from Muscat to Sindé are dates, limes, roses, Ghilaun silk, elephants' teeth, pearls, almonds, preserved fruit, cowries, slaves, arsenic, senna from Mecca, quince seeds, and gum. The imports to Sindé from Cutch are cotton, snuff, unwrought iron found in Cutch, and the small Arabian aloe. The intercourse between this province and the countries to the northward is chiefly carried on by means of the Indus, which is navigable for small vessels to a great distance from the sea. There are no established land caravans from Sindé to Moultan and Cabul, but an intercourse is carried on by mer-

chants and travellers. The East India Company had formerly a factory, and carried on a considerable trade in the province of Sinde; but it was withdrawn, probably owing to the disorderly state and poverty of the country. An unsuccessful attempt was recently made by the Company from Bombay to renew the commercial intercourse.

The government of Sinde is a military despotism, vested in three brothers of the Talpoony family. The Mahometan inhabitants compose the military strength of the country; and, during the intervals of peace, are employed as husbandmen, artificers, and menial servants—the internal commerce of the country being almost exclusively carried on by the Hindoo part of the population. Although Sinde is now but scantily peopled, it appears, at some former period, to have been thickly settled and inhabited. The armies of Sinde are collected from the various tribes who hold lands by a military tenure from the Ameers. These tribes are reckoned forty-two in number; many of whom have retained their distinctive appellations since the first Mahometan invasion, and consisted principally of adventurers, who descended from the lofty mountains of Baloochistan into the plains of Sinde, with the exception of the Jokia and Jhut tribes, which are both of Sindean origin. On the whole, the Ameers can bring into the field an army of 35,000 men.

The revenues, during the Calorie government, were estimated at eighty lacks of rupees per annum, but are now reduced, in consequence of the rapacity and ignorance of the present rulers, to forty-two lacks; from which should be deducted the Cabul tribute of twelve lacks, which is liable to be enforced should that state recover from the effects of its internal discord. After the death of Meer Futtel Ali, his surviving three brothers divided the territorial possessions and revenues; the eldest, Meer Gholaum Ali, receiving one-half as the ostensible head of the government, and being bound to defray the permanent, civil, and military expenses of the state. These charges, however, are inconsiderable, as, during a cessation of external hostilities, very few soldiers are retained.

The revenues of Sinde are farmed to private persons; and the Ameers, with the view of creating competition, remove the farmers annually, and they, having consequently no interest in the improvement of the country, direct their attention to the realising the greatest possible profit within the period of their contract. In effecting this object they are guilty of many extortions. If a person, finding a thief in his house, use force to drive him away, and in the contest either is killed, no injury is made. It often happens that villages are attacked by thieves; if in the conflict any are killed, no enquiries are made; but if they are taken prisoners, and then put to death, the parties are subjected to trial. Thieves taken in a contest of this kind are brought before a magistrate, who examines the transaction, and compels them to restore the property, or imposes a heavy fine, which, if they are unable to pay, they suffer death. One-fourth of all property recovered belongs to the govern-

ment. If either a denizen or a foreigner die, leaving a son or brother, his property devolves on them. If he leaves a wife with child, and the child prove a son, he succeeds to the property, otherwise it is seized for the state. A daughter only receives a certain allowance from her father's property; and a widow is merely entitled to her jewels, &c., or to a pecuniary compensation of 100 rupees.

The men of Sinde are well made, of a middle size, and more robust than the more southern natives of India. Their complexions are very tawny, with dark eyes and eye-brows, and uncommonly good teeth; like the Seiks, they allow their hair to grow. The Mahometans are all Soonees, and most of them of the sect of Hancee; but they have few religious prejudices, nor do their females suffer any strict seclusion. The dancing girls in Sinde are, in figure, manners, and appearance superior to those commonly seen in Hindostan. The Sinde province generally swarms with mendicants; here also, as in other Mahometan countries, are seen a class of sturdy beggars pretending to be Seids, or descendants of the prophet, who demand charity in the most insolent manner. They frequently go about soliciting alms in parties of seven or eight on horseback, well dressed, armed, and mounted, and having a green flag carried before them. When their demands are not gratified they bestow the most abusive language.

Sinde was the first conquest in Hindostan effected by the Mahometans. It was accomplished under the khaliff Walid, by Mahomed Casim, in the year of the hegira 99; but, on account of the distance and the natural strength of the country, it did not long remain attached to the khaliphat. Subsequently to this there appears to have existed two contemporaneous authorities in Sinde; the one a Rajpoot family, and the other a Mahomedan. The Lomra, a Rajpoot race, are said to have retained possession for the long period of 500 years; after which it was occupied by different chiefs, one of whom, Mirza Eesa, of the Turkanee tribe, having called in the Portuguese to his assistance against the soubahdar of Mooltan, they plundered Tatta, then the seat of government. Sinde thus remained with the Turkanees until the reign of Acber, who succeeded in effecting its conquest; and from that era it became tributary to Delhi. About A. D. 1737, during the alarm excited by the threatened invasion of Hindostan, Mahomed Abassee Caloree, of Sewee, availed himself of the apprehensions of the soubahdar of Sinde, and influenced him to resign the government into his hands. In 1739 Nadir Shah defeated the Caloree chiefs, and obliged them to take refuge in Amercote on the borders of the desert, but he afterwards permitted them to resume the government as tributaries. The family was expelled in 1783, when the present dynasty succeeded.

SINDIAH, or SCINDIA (Mahadjee), the son of a Mahratta chief, was born about 1743 at the court of the Peishwa, in Hindostan. He was at the battle of Panniput in 1761, and badly wounded and taken prisoner. Having made his escape, he took refuge in the Decan; when the Mahrattas recovered Malwa, some years after, he

was restored to his patrimonial territory, and his ambition prompted him to aspire to sovereign power. In 1770 he, in concert with Holkar, invaded Hindostan, when he made himself master of Delhi, and obtained the tutelage of the nominal emperor Shah Aulum. He now attacked the Rohillas, who were supported by Shujah-Doula and the English; and this contest was terminated by the treaty of 1782. After this he pursued his ambitious projects; and in 1785 made himself a second time master of Delhi. He also took Agra, where he established a cannon foundry; and was the first Indian prince who possessed troops trained to the European discipline. He had taken into his service Leborgne de Boigne, a Frenchman, to whose talents and courage he was much indebted; and it was this officer who, at the head of an army of Mahrattas and Moguls, gained the battle of Patan in June 1790. Sindiah was called a third time to Delhi, to the assistance of Shah Aulum, who had been deposed and cruelly treated by a rebel: the Mahratta prince restored him to the title of sovereignty, reserving to himself the imperial power. In 1791 he returned to the Deccan, where he endeavoured to obtain the office of minister of the Peishwa, who was a minor; but was disappointed. He seems to have conceived ambitious designs of much greater importance, frustrated by his sudden death in 1794. He was succeeded by his nephew Dowla Itao Sindiah.

**SIN'DON**, *n. s.* Latin, *sindon*. A fold; a wrapper.

There were found a book and a letter, both written in fine parchment, and wrapped in *sindons* of linen.

*Bacon.*

**SINE**, *n. s.* Lat. *sinus*. A line drawn from one end of an arch perpendicularly upon the diameter drawn from the other end of that arch. See below.

Whatever inclinations the rays have to the plane of incidence, the *sine* of the angle of incidence of every ray, considered apart, shall have to the *sine* of the angle of refraction a constant ratio.

*Cheyne's Philosophical Principles.*

**SINE, OR RIGHT SINE OF AN ARCH**, in trigonometry. See GEOMETRY AND TRIGONOMETRY.

**SINE ASSENSU CAPITULI**, in ecclesiastical law, a writ where a bishop, dean, prebendary, or master of an hospital, alienis the lands holden in right of his bishopric, deanery, house, &c., without the assent of the chapter, or fraternity; in which case his successor shall have this writ; and if a bishop or prebendary be disseised, and afterwards he releaseth to the disseisor, this is an alienation, upon which may be brought a writ De sine assensu capituli: but the successor may enter upon the disseisor, if he doth not die seized, notwithstanding the release of his predecessor; for, by the release, no more passeth than he may rightfully release. A person may also have this writ of lands upon demises of several predecessors, &c.

**SINE DIE**, in English law, is when judgment is given against the plaintiff, and for the defendant, when it is said, eat inde sine die; i. e. he is dismissed the court. The phrase is also used in parliament for the adjournment of a question indefinitely.

**SINECURE**, *n. s.* Lat. *sine*, without, and *cura*, care. An office which has revenue without employment.

A *sinecure* is a benefice without cure of souls.

*Ayliffe.*

No simony nor *sinecure* were known,

Nor would the bee work honey for the drone. *Garth.*

**SINECURES**, in ecclesiastical law, are benefices, without cure of souls. Their original was as follows:—The rector (with proper consent) had a power to entitle a vicar in his church to officiate under him; and this was often done; and by this means two persons were instituted to the same church and both to the cure of souls, and both did actually officiate. So that however the rectors of sinecures, by having been long excused from residence, are in common opinion discharged from the cure of souls (which is the reason of the name), and however the cure is said in the law books to be in them habitualiter only; yet in strictness, and with regard to their original institution, the cure is in them actualiter, as much as it is in the vicar. *Gibs.* 719, *Johns.* 85. That is to say, where they come in by institution; but, if the rectory is a donative, the case is otherwise: for then, coming in by donation, they have not the cure of souls committed to them. And these are most properly sinecures, according to the genuine signification of the word. *Johns.* 85.

No church where there is but one incumbent can properly be a sinecure: and, though the church be down, or the parish being become destitute of parishioners, the incumbent may be thereby necessarily acquitted from the actual performance of public duty, yet he is still under an obligation to do it, whenever a church shall be built, and there is a competent number of inhabitants; and, in the mean while, if the church be presentative, as most of such churches are, the incumbent is instituted into the cure of souls. Such benefices are rather depopulations than sinecures; and it will be proper for the new incumbent to read the thirty-nine articles, and the liturgy, in the church-yard, &c., and to do whatever other incumbents usually do. But a rectory, or portion of it, may properly be a sinecure, if there be a vicar under the rector endowed and charged with the cure; in which case it does not come within the statute of pluralities, 21 Henry VIII. c. 13.

Here, therefore, no dispensation is necessary to hold the sinecure with a former living; nor need the incumbent read the articles, or divine service, as required by 13 Eliz. c. 12, which extends only to a benefit with cure.

A sinecure donative wants no institution and induction, but one presentative must have both, especially if it consist in glebe and tithes, and not in a portion of money. By the above mentioned statute (21 Henry VIII.), not only prebends, and rectories with vicarages endowed, but deaneries and archdeaconries are declared to be benefits without cure.

**SIN'EW**, *n. s. & v. a.* { Sax. *renpe*; Belg. *senewen*; Goth. *sina*.

**SIN'EWD**, *adj.* { A tendon; ligament; muscle; strength: to knit by sinews: obsolete: sinewed and sinewy signify furnished with sinews: strong.

Her knight was feeble, and to faint,  
And all his sinewes waxen weake and raw,  
Through long enprisonment and hard constraint.  
*Spenser. Faerie Queene.*

Some other *sinews* there are, from which that overplus of strength in persuasion doth arise. *Hooker.*

The torrent roared, and we did buffet it  
With lusty *sinews*. *Shakspeare. Julius Cæsar.*

Ask the lady Bona for thy queen ;  
So shalt thou *sinewed* both these lands together. *Id. Henry VI.*

He will the rather do it, when he sees  
Ourselves well *sinewed* to our defence. *Id. King John.*

Worthy fellows, and like to prove  
Most *sinewy* swordsmen. *Shakspeare.*

The feeling power, which is life's root,  
Through every living part itself doth shed  
By *sinews*, which extend from head to foot ;  
And, like a net, all o'er the body spread. *Davies.*

The *sinewy* thread my brain lets fall  
Through every part,  
Can tie those parts, and make me one of all. *Donne.*  
The northern people are large, fair-complexioned,  
strong, *sinevy*, and courageous. *Hale's Origin of Mankind.*

The rooted fibres rose, and from the wound  
Black bloody drops distilled upon the ground :  
Mute and amazed, my hair with terror stood ;  
Fear shrunk my *sinews*, and congealed my blood. *Dryden.*

In the principal figures of a picture the painter is  
to employ the *sinews* of his art ; for in them consists  
the principal beauties of his work. *Id. Dufresnoy.*  
Strong *sinewed* was the youth and big of bone. *Dryden.*

A *sinew* cracked seldom recovers its former strength. *Locke.*

Such discouraging of men in the ways of an active  
conformity to the church's rules, cracks the *sinews* of  
government ; for it weakens and damps the spirits of  
the obedient. *South.*

Fainting, as he reached the shore,  
He dropt his *sinewy* arms : his knees no more  
Performed their office. *Pope's Odyssey.*

SING, v. n. & v. a. } *Preterite* I sang, or  
SINGER, n. s. } sung ; *participle* pass.  
SINGINGMASTER. } sung. Sax. *rūngan* ; Isl.  
*singia* ; Belg. *singhen*. To form the voice to  
melody ; articulate musically ; utter sweet  
sounds ; tell in poetry ; celebrate : the noun  
substantives corresponding.

Then sang Moses and Israel this song unto the  
Lord. *Exod. xv.*

Then shall the trees of the wood sing out at the  
presence of the Lord. *1 Chron. xvi. 33.*

The morning stars sang together. *Job.*

They that wasted us required of us mirth, saying,  
Sing us one of the songs of Zion. *Psalms cxlvii. 3.*

The time of the singing of birds is come. *Cant. ii. 12.*

I gat me men singers and women singers and the  
delights of the sons of men. *Eccles. ii. 8.*

Incles, caddisses, cambricks, lawns, why he sings  
them over as they were gods and goddesses. *Shakspeare.*

Then they for sudden joy did weep,  
And some for sorrow sung. *Id. King Lear.*

They rather had beheld  
Dissentious numbers pestering streets, than see  
Our tradesmen singing in their shops, and going  
About their functions friendly. *Id. Coriolanus.*

A man may hear this shower . . . . the wind. *Shakspeare.*

You leaden messengers,  
Fly with false aim ; pierce the still moving air,  
That sings with piercing ; do not touch my lord. *Id.*

His filching was like an unskilful singer, he kept  
not time. *Id. Merry Wives of Windsor.*

You will sooner bind a bird from singing than  
from flying. *Bacon.*

Cock birds amongst singing birds are ever the better  
singers, because they are more lively. *Id. Natural History.*

I sing the man who Judah's sceptre bore  
In that right hand which held the crook before. *Cowley.*

How could we to his godhead sing  
Forced hallelujahs ! *Milton.*

Join voices, all ye birds,  
That singing up to heaven's gate ascend. *Id.*

Thee next they sang, of all creation first. *Id.*

The birds know how to chuse their fare ;  
To peck this fruit they all forbear :

Those cheerful singers know not why  
They should make any haste to die. *Waller.*

Their airy limbs in sports they exercise,  
Some in heroick verse divinely sing. *Dryden.*

And parrots, imitating human tongue,  
And singing birds in silver cages hung. *Id. Ovid.*

Arms and the man I sing. *Id. Aeneid.*

The Grecian tragedy was at first nothing but a  
chorus of singers. *Dryden.*

Well might he sing the day he could not fear,  
And paint the glories he was sure to wear. *Smith.*

He employed an itinerant singing-master to instruct  
them rightly in the tunes of the psalms. *Addison's Spectator.*

The last, the happiest British king,  
Whom thou shalt paint or I shall sing. *Addison.*

Bid her exalt her melancholy wing,  
And raised from earth, and saved from passion, sing  
Of human hope by cross event destroyed,

Of useless wealth, and greatness unenjoyed. *Prior.*

O'er his head the flying spear  
Sung innocent, and spent its force in air. *Pope.*

And aye she wrought her mammie's wark,  
And aye she sang sac merrily :

The blithest bird upon the bush  
Had ne'er a lighter heart than she. *Burns.*

SINGEI, an ancient nation on the borders of  
Thrace and Macedonia.

SIN-GAN, a city of China of the first rank, in  
Chen-si, the largest and finest in the empire, except Peking. It is built on a great plain, and is  
the residence of the governors of Chan-si and Setchuen. It comprehends six cities of the second  
rank, and thirty-one of the third. It was anciently  
the seat of the emperors, and is still very populous. The walls are twelve miles in circuit,  
nearly square, fortified with towers, and surrounded with a deep ditch. The gates are high  
and magnificent. It has a great trade, and lies  
510 miles south-west of Pekin.

SINGARA, a city and river of the ancient  
Shinar, north of Mesopotamia. The city is now  
called Sinjar.

SINGE, v. a. Sax. *rængan* ; Belg. *senghen* ;  
Teut. *sengen*. To scorch ; burn slightly or superficially.

They bound the doctor,  
Whose beards they have singed off with brands of  
fire. *Shakspeare.*

Drake, in the vaunting stile of a soldier, would  
call this enterprise the singing of the king of Spain's  
beard. *Bacon.*

They leave a singed bottom all involved  
With stench and smoke. *Milton's Paradise Lost.*

Thus riding on his curls, he seemed to pass  
A rolling fire along, and singe the grass. *Dryden.*

That neither was *singed* in the combustion of Phaëton nor overwhelmed by the inundation of Deucalion. *Browne.*

I *singed* the toes of an ape through a burning glass, and he never would endure it after. *L'Estrange.*

SINGERS, in the temple of Jerusalem, were a number of Levites employed in singing the praises of God, and playing upon instruments before his altar. They had no habits distinct from the rest of the people; yet, in the ceremony of removing the ark to Solomon's temple, the chanters appeared dressed in tunics of byssus or fine linen. 2 Chron. v. 12.

SINGHEA, a town of Bahar, district of Ha-jypoor, on the east side of the Gunduck, near to which is the site of an ancient city, where a remarkable pillar stands: two days' journey further up the Gunduck, near a place called Kesserah, is a remarkable edifice, which appears to have been originally a cylinder placed on the frustum of a cone, for the purpose of being seen at a distance. The cone and cylinder are of brick, and appear solid throughout. The following are the dimensions:—

Feet.

Diameter of the cylindrical part . . . . .	64
Height of the cylinder . . . . .	65
Height of the conic frustum on which } the cylinder is placed . . . . .	93
Diameter of the cone at the base . . . . .	336

For what purpose these columns were originally intended it seems impossible to tell.

SINGING, the action of making divers inflections of the voice agreeable to the ear, and correspondent to the notes of a song or piece of melody. See MELODY. The first thing to be done in learning to sing is to raise a scale of notes by tones and semitones to an octave, and descend by the same notes; and then to rise and fall by greater intervals, as a third, fourth, fifth, &c., and to do all this by notes of different pitch. Then these notes are represented by lines and spaces, to which the syllable fa, sol, la, mi, are applied, and the pupil taught to name each line and space thereby; whence this practice is called sol-faing, the nature, reason, effects, &c., whereof, see under SOLFAING.

SINGING, PROCESSIONAL. About the year 386, during the persecution of the orthodox Christians by the empress Justina, mother to the then young emperor Valentinian II., ecclesiastical music was introduced in favor of the Arians. 'At this time,' says St. Augustine, 'it was first ordered that hymns and psalms should be sung after the manner of eastern nations, that the people might not languish and pine away with a tedious sorrow, and from that time to the present it is retained at Milan, and imitated by almost all the other congregations of the world.' Music is said by some of the fathers to have drawn the Gentiles frequently into the church, who liked its ceremonies so well that they were baptised before their departure. About this time, we find by Socrates the historian (l. vi. c. 8), that the heretics used to sing hymns, marching through the streets of Constantinople in procession, with which the vulgar were so much captivated that the orthodox, under the direc-

tion of St. Chrysostom, thought it necessary to follow the example which had been set them by their greatest enemies. Processional singing had been long practised by the Pagans, but no mention is made of it among Christians before this period.

SINGING BY THE PRIMITIVE CHRISTIANS. With respect to the music that was first used by the Christians, as no specimens remain, it is difficult to determine of what kind it was. That some part of the sacred music of the apostles and their immediate successors, in Palestine and the adjacent countries, may have been such as was used by the Hebrews, is probable; but it is no less probable that the music of the hymns which were first received in the church, wherever Paganism had prevailed, resembled that which had been many ages used in the heathen temple worship. Of this the versification of those hymns affords an indisputable proof; and examples may be found in all the breviaries, missals, and antiphonaries, ancient and modern, of every species of versification which has been practised by the Greek and Roman poets, particularly the lyric. Hilary, bishop of Poictiers, and St. Ambrose, are said to have been the first that composed hymns to be sung in the western churches. Both these fathers flourished about the middle of the fourth century; but Prudentius, a Christian poet, contemporary with Theodosius, who died in 395, was author of most of the hymns in the Roman breviary.

The ancient hymn, 'Te Deum laudamus,' still retained in the church, appears to have furnished the poet Dante with a model of the twenty-eighth canto of his Paradiso, where, under three different hierarchies, consisting each of three choirs or choruses, the heavenly host of cherubim and seraphim are singing perpetual hosannahs. Milton has assigned them the same employment:—

No voice exempt, no voice but well could join  
Melodious part, such concord is in heaven.

Parad. Lost, book iii.

See PSALMODY.

SINGING OF BIRDS. It is worthy of observation that the female of no species of birds ever sings; with birds it is the reverse of what occurs in human kind. Among the feathered tribe, all the cares of life fall to the lot of the tender sex; theirs is the fatigue of incubation; and the principal share of nursing the helpless brood; to alleviate these fatigues, and to support her under them, nature has given to the male the song, with all the little blandishments and soothing arts; these he fondly exerts, even after courtship, on some spray contiguous to the nest, during the time his mate is performing her parental duties. But that she should be silent is also another wise provision of nature; for her song would discover her nest; as would also a gaudiness of plumage, which, for the same reason, seems to have been denied her. On the song of birds several curious experiments and observations have been made by the Hon. Daines Barrington. See Philosophical Transactions, vol. Ixiii., and SONG.

SIN'GLE, *adj.* & *v. a.* } Lat. *singulus*, *singularis*. One; sole; SIN'GLENESS, *n.s.* } particular; individual; SING'LЯY, *adv.* } individual; pure; simple; SING'ULAR, *adj.* } unmarried; alone; SING'ULARITY, *n.s.* } SING'ULARLY, *adv.* } to single is to take alone or separately; choose out from others; the noun substantive and adverb correspond with single adjective: singular is particular; uncommon; alone; expressing singleness; the adverb and noun substantive corresponding.

The light of the body is the eye: if thine eye be single thy whole body shall be full of light.

*Matt.* ... 22.

Hardly they herd, which by good hunters singled  
... *Sidney.*

Yea simply, saith Basil, and universally, whether it be in works of nature, or of voluntary choice, I see not any thing done as it should be, if it be wrought by an agent *singling* itself from consorts. *Hooke.*

It is not the deepness of their knowledge, but the singleness of their belief, which God accepteth. *Id.*

The spirit of singularity in a few ought to give place to public judgment. *Id.*

Is the single man therefore blessed? no: a walled town is more worthier than a village, so is the forehead of a married man more honourable than the bare brow of a bachelor. *Shakspeare.*

I saw him in the battle range about,  
And how he singled Clifford forth. *Id. Henry VI.*

Look thee, 'tis so; thou sing'y honest man,  
Here take: the gods out of my misery  
Have sent thee treasure. *Id. Timon of Athens.*

Your gallery  
Have we passed through, not without much content  
In many singularities; but we saw not  
That which my daughter came to look upon,  
The statue of her mother. *Id. Winter's Tale.*

Pliny addeth this singularity to that soil that the second year the very falling down of the seeds yieldeth corn. *Raleigh.*

To make flowers double is effected by often removing them into new earth; as, on the contrary, double flowers, by neglecting and not removing, prove single. *Bacon's Natural History.*

Every man may have a peculiar favour, which, although not perceptible unto man, is yet sensible unto dogs, who hereby can single out their master in the dark. *Ba. ...*

They were in their own nature circumspect and slow, discountenanced and discontent; and those the ear singled as fittest for his purpose. *Haward.*

If the injured person be not righted, every one of them is wholly guilty of the injustice, and therefore bound to restitution singly and entirely. *Taylor's Rule of Living Holy.*

So singular a sadness  
Must have a cause as strange as the effect. *Denham's Sophy.*

His wisdom such,  
Three kingdoms wonder, and three kingdoms fear,  
Whilst single he stood forth. *Denham.*

Servant of God, well hast thou fought  
The better fight, who single hast maintained  
Against revolted multitudes the cause of truth. *Milton.*

Dost thou already single me? I thought  
Gyves and the mill had tamed thee. *Milton's Agonistes.*

His zeal  
None seconded as singular and rash. *Milton.*

Catholicism, which is here attributed unto the church, must be understood in opposition to the legal singularity of the Jewish nation. *Pearson.*

They tend to the perfection of human nature, and to make men singly and personally good, or tend to the happiness of society. *Tillotson's Sermons.*

Though, according to the practice of the world, it be singular for men thoroughly to live up to the principles of their religion, yet singularity in this matter is a singular commendation of it. *Id.*

Some were single acts, though each complete; But every act stood ready to repeat. *Id.*

Then Theseus joined with bold Pirithous came,

A single concord in a double name. *Dryden.*

In sweet possession of the fairy place,  
Single, and conscious to myself alone  
Of pleasures to the excluded world unknown. *Id.*

Begin, auspicious boy, to cast about  
Thy infant eyes, and with a smile thy mother single  
out. *Id.*

If St. Paul's speaking of himself in the first person singular has so various meanings, his use of the first person plural has a greater latitude. *Locke.*

The words are clear and easy, and their origin are of single signification without any ambiguity. *South.*

Singularity in sin puts it out of fashion, since to be alone in any practice seems to make the judgment of the world against it; but the concurrence of others is a tacit approbation of that in which they concur. *Id.*

Solitude and singularity can neither daunt nor disgrace him, unless we could suppose it a disgrace to be singularly good. *Id.*

High Alba,  
A lonely desart, and an empty land,  
Shall scarce afford, for needful hours of rest,  
A single house to their benighted guest. *Addison on Italy.*

These busts of the emperors and empresses are all very scarce, and some of them almost singular in their kind. *Addison.*

I took notice of this little figure for the singularity of the instrument: it is not unlike a violin. *Id. On Italy.*

Single the lowliest of the am'rous youth;  
Ask for his vows, but hope not for his truth. *Prior.*

As no single man is born with a right of controuling the opinions of all the rest, so the world has no title to demand the whole time of any particular person. *Pope.*

Belinda  
Burns to encounter two advent'rous knights,  
At ombre singly to decide their doom. *Id.*

As simple ideas are opposed to complex, and single ideas to compound, so propositions are distinguished: the English tongue has some advantage above the learned languages, which have no usual word to distinguish single from simple. *Watts.*

That idea which represents one particular determinate thing is called a singular idea, whether simple, complex, or compound. *Id.*

Men must be obliged to go through their business with singleness of heart. *Law.*

Doubtless, if you are innocent, your case is extremely hard, yet it is not singular. *Female Quixote.*

SINGROWLA, a district and rajah's territory in the province of Gundwana, situated about 24° N. lat., and bounded on the east by the district of Palamow in Bahar. The rajah's territory begins on the north-west, at a narrow defile on the Bickery Hills, called Bulghaut.

In this district, between the hills, are extensive uncultivated valleys, frequently covered with forests. A few small villages are scattered over the face of the country, in the vicinity of which

some cultivation is seen—but the land generally is very desolate. Iron is found in abundance.—Blunt, &c.

SINGUMNERE, a district belonging to the Mahratta peshwa, in Aurungabad, situated about 20° N. lat., and estimated to yield a revenue of ten lacks of rupees per annum. It is hilly, but fertile. The chief towns are Singumner, Battwal, and Bejaipoor.

**SINISTER**, *adj.* Fr. *sinistre*; Lat. *sinister*.

**SINISTROUS**, *adj.* *nister.* Being on the left hand; left; not right; not dexter; not auspicious.

It seems to be used with the accent on the second syllable, at least in the primitive, and on the first in the figurative sense. The other adjective is a synonyme, and the abverb corresponds.

The duke of Clarence was soon after by *sinister* means made clean away. *Spenser on Ireland.*

Is it so strange a matter to find a good thing furthered by ill men of a *sinister* intent and purpose, whose forwardness is not therefore a bridle to such as favour the same cause with a better and sincere meaning? *Hooker.*

When are there more unworthy men chosen to offices, when is there more strife and contention about elections, or when do partial and *sinister* affections more utter themselves, than when an election is committed to many? *Whitgift.*

My mother's blood

Runs on the dexter cheek, and this *sinister*  
Bounds in my sire's. *Shakspeare. Troilus and Cressida.*

He professes to have received no *sinister* measure from his judge, but most willingly humbles himself to the determination of justice. *Bacon's Essays.*

*Id. Measure for Measure.*

Those may be accounted the left hands of courts; persons that are full of nimble and *sinister* tricks and shifts, whereby they pervert the plain courses of courts, and bring justice into oblique lines and labyrinths. *Bacon's Essays.*

Tempt it again; that is thy act, or none:

What all the several ills that visit earth,  
Brought forth by night with a *sinister* birth,  
Plagues, famine, fire, could not reach unto,  
The swords, nor forfeits, let thy fury do. *Ben Jonson.*

But a rib,

Crooked by nature, bent, as now appears,  
More to the part *sinister* from me drawn. *Milton.*

The spleen is unjustly introduced to invigorate the *sinister* side, which, being dilated, would rather infirm and debilitate it. *Browne's Vulgar Errors.*

Many in their infancy are *sinistrously* disposed, and divers continue all their life left-handed, and have but weak and imperfect use of the right. *Id.*

In his *sinister* hand, instead of ball,  
He placed a mighty mug of potent ale. *Dryden.*

The just person has given the world an assurance, by the constant tenor of his practice, that he makes a conscience of his ways, and that he scorns to undermine another's interest by any *sinister* or inferior arts. *South.*

A knave or fool can do no harm, even by the most *sinistrous* and absurd choice. *Bentley.*

To condescend to mean arts and low dissimulation for the sake of a name: and in a *sinister*, indirect way, sue hard for a little incense, not caring from whom he receives it: his ambition then becomes vanity. *Mason.*

**SINISTER** is ordinarily used among us for unlucky, though, in the sacred rites of divination,

the Romans used it in an opposite sense. Thus avis *sinistra*, or a bird on the left hand, was esteemed a happy omen: whence, in the law of the twelve tables, Ave *sinistra populi magister esto.*

**SINISTER**, in heraldry. The sinister side of an escutcheon is the left hand side; the sinister chief, the left angle of the chief; the sinister base, the left hand part of the base.

**SINISTER ASPECT**, among astrologers, is an appearance of two planets happening according to the succession of the signs; as Saturn in Aries, and Mars in the same degree of Gemini.

**SINISTRI**, a sect of ancient heretics, thus called because they held the left hand in abhorrence, and made it a point of religion not to receive any thing therewith.

**SINK**, *v.n., v.a. & n.s.* Pret. I sunk, anciently sank; part. sunk or sunken. Sax. *renican*; Belg. *senken*; mod. Germ. *siggnan*. To fall down through any medium; to go to the bottom: hence to fall gradually; lose height or prominence; tend to ruin: as a verb active to put under water; depress; degrade; make to fall; depress; suppress: a sink is a drain; any place where offal or corruption is gathered.

Heaven bear witness,  
And, if I have a conscience, let it sink me,  
Even as the ax falls, if I be not faithful. *Shakspeare.*

**SINKING FUND**. The term *sinking fund* is applied to a fund appropriated by a government to the purchase or extinguishment of its own debts. Where a government merely directs its treasurer to apply monies, accruing from permanent sources of revenue, to the payment of the public debt, the term *sinking fund* can only signify the excess of the current revenues over the current expenditures. But the term is not ordinarily applied in such a case. In England, as early as 1716, Sir Robert Walpole projected the sinking fund system, which was partially applied at that time, but brought into operation more fully in 1786, by Mr. Pitt. New taxes were imposed to such an amount as, upon estimation, would leave a surplus revenue of £900,000 beyond the current annual expenditure, and the payment of interest on the public debt. Assuming that, for a given number of years, the expenditure of the government would not exceed the estimated amount, and that the resources would yield this surplus, it followed, of course, that the public debt would eventually be extinguished by the application of this surplus to this purpose. And if the revenues and expenditures for other purposes than the payment of the interest and principal of the public debt were kept at the same amount, it would follow that a greater amount could annually be applied to the payment of the principal of the debt, since a smaller amount would be requisite for the payment of the interest, in consequence of the constant reduction of the debt. All this is quite plain, and it would be equally true whether the payments were the extinguishment of a certain portion of the debt, or the purchase of it by the commissioners, or by trustees, who should hold the amount redeemed, and receive

interest upon it, like any other creditors of the government, applying the interest so received to the further purchase of stock. This latter system was adopted in Great Britain, so that, in 1813, when this system of the sinking fund had been in operation twenty-seven years, a little more than £210,000,000 sterling had been redeemed, leaving the net amount of the public debt about £575,000,000, though the nominal amount was then above £812,000,000. In 1786, the debt was about £238,000,000. When this system was adopted, it was represented that, by some mysterious operation, it would infallibly result in the extinguishment of the debt; and the system was celebrated as a grand economical discovery. But after infinite arguments and calculations, and some ridicule on the part of unbelievers, it was found that there was no advantage obtained by buying up a part of the debt, and at the same time contracting an equal or greater amount at an equivalent rate of interest. A sinking fund, in the plain and intelligible sense of being a system of provisions and guarantees for the payment of the interest and redemption of the principal of the public debt, is undoubtedly of great importance, and necessary to sustain the public credit. When no part of the debt is made redeemable, such a system can be carried into operation only by buying up the public securities. But the still continuing to call the part so bought up a portion of the public debt, and receiving interest upon it, and keeping accounts respecting it, are a mere idle ceremony. A sinking fund was early established under the government of the United States. From 1803 down to 1817, the sum of 8,000,000 dollars annually was appropriated to that fund, and the stock bought up or paid off by the treasurer in the treasury office, to the credit of the commissioners of that fund; and the interest accruing on such stock constituted a part of the fund for the payment of the interest and redemption of the principal of the unredeemed part of the debt; and in 1814, a little more than 33,000,000 dollars was entered in the books of the treasury to the credit of those commissioners. Certain revenues were appropriated to this fund, it being intended, like any other similar one, as a sort of pledge of the public faith and resources to the public creditors. But before the close of that war, the fund had, from time to time, been charged with the payment of amounts to which it was inadequate, so that it no longer held out sufficient security to the public creditors. Accordingly, in 1817, a larger amount of appropriations was made to the fund, and by the act of congress of the third of March of that year, it was provided that the certificates of the stock redeemed should be cancelled; that is, the commissioners of this fund did not any longer appear as the creditors of the government on the treasury books. The ordinary and plain mode of proceeding was adopted: when any part of the debt was paid, the securities were cancelled, and did not afterwards appear in the public accounts.

SINKING SPRING VALLEY, an extensive valley of Pennsylvania, 200 miles north-west of Phila-

delphia, abounding with stones, lead ore, &c. It is named from several of the largest streams in it sinking, and, after a subterraneous passage of several miles, rising again. Of these, the principal is called the Arch Spring, which is thirty feet broad, and has a natural arch of stone over it.

SIN-NOO, or SIN-NUM, in the history of China, the second emperor of the Chinese, between whom and Fo-hi, the first emperor, there is an interval, or chronological chasm, of 18,000 years! Yet Voltaire and other modern philosophers, who question the truth of the Scripture history, give full credit to these fables, and appeal to them as proofs that our world is much older than the Mosaic history makes it. Fo-hi, according to the Chinese, having founded their empire 21,000 years before the Christian era, Sin-Noo, if a real character, must have lived 3000 years before that period. By F. Du Halde he is called Chin-Nong, and ranked the next monarch after Fo-hi. He is said to have taught mankind agriculture and other useful arts. He was succeeded by his son Hoam, or, as Du Halde calls him, Hoang Ti. From all these circumstances the learned Bryant concludes that Sin-Noo is the same with Noah, and Hoam the same with Ham. And, in farther proof of this, he quotes the ancient history of Japan, which mentions Syn-Mu as the founder of their monarchy.

SINON, in ancient history, a son of Sisyphus, who accompanied the Greeks to the Trojan war, where he distinguished himself more by his frauds and villanies than by his merits. By such means, however, the Greeks became victors, after their ten years' siege of Troy. The Greeks having completed their famous wooden horse, as a sacred present to the gods of Troy, Sinon fled to the Trojans, with his hands bound behind his back, pretending to have just escaped from being sacrificed by them; assured Priam that they had just sailed for Asia, and advised him to admit their farewell present of the wooden horse. Priam, giving him full credit, admitted the horse, and at night Sinon completed his perfidy, by opening that machine and letting out the armed Greeks, who admitted their fellow soldiers, massacred the people, and burnt the city. See TROY. Famous as the Trojan war has been, chiefly through the merit of Homer's poem on it, the capture and destruction of that unfortunate city, by such complicated treachery and hypocrisy, redound nothing to the honor of the Grecian heroes.

SI NON OMNES, in English law, a writ on association of justices, by which, if all in commission cannot meet at the day assigned, it is allowed that two or more of them may finish the business. Reg. Orig. 202 : F. N. B. 185. And, after the writ of association, it is usual to make out a writ of si non omnes, directed to the first justices, and also to those who are so associated with them; which reciting the purport of the two former commissions, commands the justices that, if all of them cannot conveniently be present, such a number of them may proceed, &c. F. N. B. 111.

SINOPE, in fabulous history, a daughter of the river god Asopus, who was beloved by Apollo, who carried her off to the coast of

**Asia Minor**, where she bore a son to him, named **Syrus**, and gave her name to the town.

**SINOPE**, in ancient geography, a sea-port town of Asia Minor, in Pontus, founded by a colony of Milesians. It was long independent, and became famous as the birth place of Diogenes, the Cynic philosopher. It was afterwards seized by Pharnaces, king of Pontus, and Mithridates the Great made it his capital.—Strabo 2; Mela 1. c. 19; Iod. 4. It is now called Sinop.

**SINOPE**, the ancient name of Sinnessa.

**SINOPICA TERRA**, in ancient mineralogy, a red earth of the ochre kind, called also rubrica sinopica, and by some authors sinopis. It is very close, compact, and weighty, of a fine glowing purple color. It is of a pure texture, but not very hard, and of an even but dusty surface. It adheres firmly to the tongue; is perfectly fine and smooth to the touch; does not crumble easily between the fingers; stains the hands; melts slowly in the mouth; is perfectly pure and fine, of an austere astringent taste, and ferments violently with aquafortis. It was dug in Cappadocia, and carried for sale to Sinope, whence its name. It is now found in plenty in New Jersey, in America, and is called by the people there bloodstone. Its fine texture and body, with its high florid color, must make it very valuable to painters; and, from its astringency, it will probably be a powerful medicine.

**SINOPLE**, in heraldry, denotes vert, or green color, in armories. Sinople is used to signify love, youth, beauty, rejoicing, and liberty; whence it is that letters of grace, ambition, legitimation, &c., are always sealed with green wax.

**SINOVIA**, or **SINOVIA**, a mucilaginous fluid in the joints of animals, intended to facilitate motion by lubricating the parts. See **ANATOMY**, Index. ‘The only analysis of sinovia,’ says Dr. Thomson, in his **System of Chemistry**, vol. iv. p. 423—425, ‘which has hitherto appeared, is that by Mr. Margueron, which was published in the 14th vol. of the **Annales de Chimie**. He made use of sinovia obtained from the joints of the lower extremities of oxen. The sinovia of the ox, when it has just flowed from the joint, is a viscid semi-transparent fluid, of a greenish-white color, and a smell not unlike frog spawn. It very soon acquires the consistence of jelly, whether it be kept in a cold or a hot temperature, whether exposed to the air or excluded from it. This consistence does not continue long; the sinovia soon recovers its fluidity, and deposits a thready-like matter. Sinovia mixes readily with water, and imparts to it a great deal of viscosity. The mixture froths when agitated; becomes milky when boiled, and deposits some pellicles on the sides of the dish; but its viscosity is not diminished. When alcohol is poured into sinovia, a white substance precipitates, which has all the properties of albumen; 100 parts of sinovia contain 4·52 of albumen. The liquid still continues as viscid as ever; but, if acetic acid be poured into it, the viscosity disappears altogether, the liquid becomes transparent, and deposits a quantity of matter in white threads, which possesses the following properties: 1. It has the color, smell, taste, and elasticity, of vegetable gluten. 2. It is soluble in concentrated acids and pure

alkalies. 3. It is soluble in cold water; the solution froths; acids and alcohol precipitate the fibrous matter in flakes; 100 parts of sinovia contain 11·86 of this matter. When the liquid, after these substances have been separated from it, is concentrated by evaporation, it deposits crystals of acetite of soda. Sinovia, therefore, contains soda. Margueron found that 100 parts of sinovia contained about 0·71 of soda. When strong sulphuric, muriatic, nitric, acetic, or sulphurous acid, is poured into sinovia, a number of white flakes precipitate at first, but they are soon redissolved, and the viscosity of the liquid continued. When these acids are diluted with five times their weight of water, they diminish the transparency of sinovia, but not its viscosity; but, when they are so much diluted that their acid taste is just perceptible, they precipitate the peculiar thready matter, and the viscosity disappears. When sinovia is exposed to a dry atmosphere, it gradually evaporates, and a sealy residuum remains, in which cubic crystals, and a white saline efflorescence, are apparent. The cubic crystals are muriate of soda; 100 parts of sinovia contain about 1·75 of this salt. The saline efflorescence is carbonate of soda. Sinovia soon putrefies in a moist atmosphere, and, during the putrefaction, ammonia is exhaled. When distilled in a retort, there come over, first, water, which soon putrefies; then water containing ammonia; then empyreumatic oil and carbonate of ammonia. From the residuum, muriate and carbonate of soda may be extracted by lixiviation. The coal contains some phosphate of lime.’ From the analysis of M. Margueron, sinovia is composed of 11·86 fibrous matter, 4·52 albumen, 1·75 muriate of soda, .71 soda, .70 phosphate of lime, and 80·57 water.

**SINTOO**, the ancient religion of the Japanese, so called from **Sin**, one of their chief deities. How far it differed from their present system we know not. See **JAPAN**.

**SINUATE**, *v. n.* Lat. *sinuo*. To bend  
**SINTATION**, *n. s.* in and out: the noun sub-  
**SIN'US**, *adj.* Stantive and adjective cor-  
responding.

Try with what disadvantage the voice will be carried in an horn, which is a line arched; or in a trumpet, which is a line retorted; or in some pipe that were *sinuous*. Bacon.

These as a line, their long dimension drew,  
Streaking the ground with *sinuous* trace.

Milton’s *Paradise Lost*.

The human brain is, in proportion to the body, much larger than the brains of brutes in proportion to their bodies, and fuller of anfractus, or *situations*. Hale’s *Origin of Mankind*.

In the dissections of horses, in the concave or *sinuous* part of the liver, whereat the gall is usually seated in quadrupeds, I discover an hollow, long, membranous substance. Browne.

Another was very perfect, somewhat less with the margin, and more *sinuated*. Woodward on *Fossils*.

**SINTOSITY** is a series of bends and turns in arches or other irregular figures, sometimes jutting out, and sometimes falling in.

**SIN'US**, *n. s.* Lat. *sinus*. A bay of the sea; an opening of the land.

Plato supposest his *Atlantis* to have sunk all into the sea. whether that be true or no, I do not think

it impossible that some arms of the sea, or *sinuses*, might have had such an original.

*Burnet's Theory of the Earth.*

SINUS, in anatomy, denotes a cavity in certain bones and other parts, the entrance whereof is very narrow, and the bottom wider and more spacious. See ANATOMY, Index.

SINUS, in surgery, a little cavity or succulus, frequently formed by a wound or ulcer, wherein pus is collected.

SION, a famous hill in Judea. See ZION.

SIOUX, or SIOUS, a late powerful nation of North American Indians, who inhabit the banks of the head waters of the Mississippi and Missouri; and the islands of Lake Superior.

SIP, *v. a., v. n., & n.s.* Sax. *ripan*; Belg. *sippen*. To drink by small draughts; to take no more than the mouth will contain: to drink a small quantity: a small draught.

Her face o' fire  
With labour, and the thing she took to quench it  
She would to each one *sip*.

*Shakspeare. Winter's Tale.*

Find out the peaceful hermitage;  
The hairy gown and mossy cell,  
Where I may sit and rightly spell  
Of every star that heaven doth shew,  
And every herb that *sips* the dew. *Milton.*

One *sip* of this  
Will bathe the drooping spirits in delight,  
Beyond the bliss of dreams. *Id.*

The winged nation o'er the forest hies:  
Then stooping on the meads and leafy bowers,  
They skim the floods and *sip* the purple flowers. *Dryden.*

She raised it to her mouth with sober grace;  
Then, *sipping*, offered to the next. *Id. Eneid.*

Soft yielding minds to water glide away,  
And *sip* with nymphs their elemental tea. *Pope.*

She should imbue the tongue with what she *sips*,  
And shed the balmy blessing on the lips,  
That good diffused may more abundant grow,  
And speech may praise the power that bids it flow. *Couper.*

SIPHANTO, or SIPHINO, an island of Greece, in the Archipelago, situated to the west of Paros. It is nearly thirty miles in length, and about seven in breadth. It has not a good harbour, but its atmosphere is healthy, and its soil, where not covered with marble and granite, is of considerable fertility in maize, wheat, mulberries, olives, vines, figs, and cotton. Its gold and silver mines are no longer known; but mines of iron and lead have been traced. Here are several quarries of beautiful marble. The population, about 4000, are all Greeks. The chief place, a village called Siphanto, stands on a high rock.

SIPHINOS, in ancient geography, one of the Cyclades, lying west of Paros, famous for its fruits, mines, and the licentiousness of the people. They behaved with spirit in the Persian war. It is now called Sifanto.

SIPHON, *n. s.* Fr. *siphon*; Gr. *σιφων*; Lat. *siphō*. A pipe through which liquors are conveyed. See HYDROSTATICS.

Beneath the incessant weeping of these drains  
I see the rocky *siphona* stretched immense,  
The mighty reservoirs of hardened chalk,  
Of stiff compacted clay. *Thomson's Autumn.*

SIPHONANTHUS, in botany, a genus of plants belonging to the class of tetrandria, and

order of monogynia. The corolla is monopetalous, funnel-shaped; the tube is very narrow, and much longer than the calyx. There are four berries, each containing one seed. There is only one species, viz. *S. Indica*, a native of the East Indies.

SIPONTUM, SEPUNTUM, or SIPUS, in ancient geography, a town of Apulia, so denominated from the great quantity of sepiæ, or cuttlefish, that are thrown upon the coast. Diomed was the founder, after his return from Troy.—Strabo. It became afterwards a Roman colony. In the early ages of Christian hierarchy, a bishop was fixed in this church; but, under the Lombards, his see was united to that of Beneventum. Being again separated, Sipontum became an archiepiscopal diocese in 1094, when it was so ravaged by the Barbarians that it never recovered its splendor, but sunk into such misery that in 1260 it was a mere desert. Manfred therefore began in 1261 to build a new city on the seashore, to which he removed the few remaining Sipontines. Sipontum lay a mile from the shore. Excepting a part of its Gothic cathedral, scarcely one stone of the ancient city now remains upon another.

SIPPORIÆ. See SEPHARVAIM.

SIPUNCULUS, in zoology, a genus of the intestine class of worms in the Linnaean system. Its characters are these:—The body is round and elongated; the mouth attenuated and cylindrical; and the lateral aperture of the body rugged. There are two species; one found under stones in the European seas, and the other in the Indian ocean.

SIPUS. See SIPONTUM.

SIPYLUM, or SIPYLUS, an ancient town of Lydia, on a mountain so named, near the Meander, anciently called Ceraunius, from its frequent thunder storms. This town, with twelve others near it, was destroyed by an earthquake in the reign of Tiberius. Strabo 1 and 12, Paus. i. c. 20.

SIR, *n. s.* Fr. *sire*; Ital. *seignior*; Span. *señor*; Lat. *senior*. A respectful appellation; title of a knight or baronet: used for man; also in composition as a title of the loin of beef, once knighted by one of our kings.

Speak on, sir,  
I dare your worst objections: if I blush,  
It is to see a nobleman want manners.

*Shakspeare. Henry VIII.*

But, sir, be sudden in the execution;  
Withal obdurate; do not let him plead.

*Id. Richard III.*

Sir king,

This man is better than the man he slew.

*Shakspeare.*

I have adventured  
To try your taking of a false report, which hath  
Honoured with confirmation your great judgment,  
In the election of a sir so rare. *Id. Cymbeline.*

Sir Horace Vere, his brother, was the principal in the active part. *Bacon's War with Spain.*

He lost his roast-beef stomach, not being able to touch a sir-loin which was served up. *Addison.*

The court forsakes him, and sir Balaam hangs. *Pope.*

It would be ridiculous, indeed, if a spit, which is strong enough to turn a sir-loin of beef, should not be able to turn a lark. *Swift.*

And the strong table groans  
Beneath the smoking sir-loin, stretched immense  
From side to side. *Thomson's Autumn.*

SIRANI (John Andrew), an eminent historical painter, born at Bologna in 1610. He was a disciple of Guido. His Last Supper at Rome is much admired. He died in 1670.

SIRANI (Elizabeth), daughter and disciple of the preceding, was born at Bologna in 1638. Before she reached her fifteenth year, she was reckoned a prodigy in painting. She painted in the manner of her father and equalled him. She died in 1664.

SIRBO, in ancient geography, a lake between Egypt and Palestine, now called Sebaket Bar-doil. Plin. iv. c. 13.

SIRCAR, any office under the government in Hindostan. It is sometimes used for the state of government itself, also for a province or any number of pergunnahs placed under one head in the government books, for convenience in keeping accounts. In Bengal the under-banians of European gentlemen are called Sircars. See CIRCAR.

SIRE, *n.s. & v.a.* Fr. *sire*; Lat. *senior*. A father. Used in poetry. Shakspeare uses the verb for to beget; produce.

He, but a duke, would have his son a king,  
And raise his issue like a loving sire.

*Shakspeare. Henry VI.*

Cowards father cowards, and base things sire the base. *Shakspeare.*

A virgin is his mother, but his sire  
The power of the Most High. *Milton's Paradise Lost.*

And now I leave the true and just supports,  
Of legal princes and of honest courts,  
Whose sires, great partners in my father's cares,  
Saluted their young king at Hebron crowned. *Prior.*

Whether his hoary sire he spies,  
While thousand grateful thoughts arise,  
Or meets his spouse's fonder eye.

*Pope's Chorus to Brutus.*

SIRE was a title of honor formerly given to the king of France as a mark of sovereignty.

SIRE was likewise anciently used in the same sense with sieur and seigneur, and applied to barons, gentlemen, and citizens.

SIREN, *n.s.* Lat. *siren*. A goddess who enticed men by her singing, and devoured them; any mischievous enticer.

Oh train me not, sweet mermaid, with thy note,  
To drown me in thy sister's flood of tears:  
Sing, siren, to thyself, and I will dote;  
Spread o'er the silver waves thy golden hair,  
And as a bed I'll take thee, and there lie.

*Shakspeare.*

The SIRENS, or SIRENES, in fabulous history, were celebrated songstresses, who were ranked among the demigods of antiquity. Hyginus places their birth among the consequences of the rape of Proserpine. Ovid makes them daughters of the river god Achelous by the Muse Calliope, or Melpomene. Their number was three, and their names were Parthenope (who gave its ancient name to Naples), Lygeia, and Leucosia; or, as others say, Molpe, Aglaophonos, and Thelxiope. Some make them half women and half fish; others half women and half birds. There are antique representations of them still subsisting under both these forms. Pausanias

tells us, that the Sirens, by the persuasion of Juno challenged the Muses to a trial of skill in singing; and these having vanquished them, plucked the golden feathers from the wings of the Sirens, and formed them into crowns, with which they adorned their own heads. The Argonauts were diverted from the enchantment of their songs by the superior strains of Orpheus. Ulysses, however, had great difficulty in securing himself from their seduction. See Odys. lib. xii. Some say that the Sirens were queens of the islands named Sirenusa, and chiefly inhabited the promontory of Minerva, upon the top of which that goddess had a temple, built by Ulysses. Here there was a renowned academy, famous for eloquence and the liberal sciences: but at last they abused their knowledge to the corruption of manners, and enticed passengers, who there consumed their patrimonies in riot and effeminacy. The place is now called Massa. Some writers tell us of a certain bay, contracted within winding straits and broken cliffs, which, by the singing of the winds and beating of the waters, returns a delightful harmony that allures the passenger to approach, who is immediately thrown against the rocks, and swallowed up by the violent eddies. Horace calls idleness a siren. But the fable may be applied to pleasures in general, which, if too eagerly pursued, betray the incautious into ruin. Mr. Bryant says that the Sirens were Cuthite and Canaanitish priests, who had founded temples in Sicily, which were rendered infamous on account of the women who officiated. They were much addicted to cruel rites, so that the shores upon which they resided were covered with the bones of men destroyed by their artifices. Virg. Aen. lib. v. 864. All ancient authors agree that the Sirens inhabited the coast of Sicily. The name, says Bochart, in the Phoenician language, implies a songstress. Hence it is probable, says Dr. Burney, that they were excellent singers, but of corrupt morals.

SIREN, in zoology, a genus of animals, arranged by Linnaeus in the class of amphibia and the order of meantes. But Gmelin has since corrected the arrangement of that eminent zoologist, and ranked it under the genus Murana. See MURANA.

SIRENUSÆ, in ancient geography, five small islands near Caprea, on the coast of Italy, said to have been anciently inhabited by the Sirens. They are now called Galli. See GALLI.

SIREX, in zoology, a genus of animals belonging to the class of insects, and to the order of hymenopterae. The mouth has two strong jaws; there are two truncated palpi or feelers, filiform antennæ, an exserted, stiff, serrated sting, a sessile mucronated abdomen, and anceolated wings. There are seven species.

SIRHIND, or SERHIND, a large district in the north-western quarter of Delhi, situated between 30° and 31° N. lat.

The portion of this district which borders on Hansy Hissar and Carnaul is extremely barren, being covered with low wood, and in many places almost destitute of water. The city of Sirhind was formerly the capital of this territory, but it is now a scene of desolation, and has probably never recovered the dreadful ravages

of the seik Bairaggee Banda about 1707, who is stated to have levelled its palaces and public buildings to the ground. Patiala is now the largest and most flourishing town in this province, and next to it is Tahnesir (Thanesur), which is still held in high religious veneration by the Hindoos, as is also the river Sereswati, which flows through the country.

The greatest part of the district is possessed by the Malawa Singh class of seiks. In March, 1809, rajah Ranjeet Singh, the seik chief of Lahore, gave up the forts he had occupied on the left bank of the Sutuleje to the British, who restored them to their former owners.

SIRHIND, a town in the province of Delhi, the capital of the district of this name, 155 miles N.N.W. from Delhi. Lat.  $30^{\circ} 40' N.$ , long.  $75^{\circ} 55' E.$  This place was flourishing in the time of Abul Fazel, who describes it as a famous city, containing the delightful gardens of Hafez Rehneb, but it now exhibits only a shapeless mass of ruins. In the neighbourhood are numerous mango groves, and some excellent tanks.

SIRICIUS, pope of Rome, who succeeded pope Damasus I., A.D. 384, to the exclusion of Uiscinus. His Epistles are preserved in Constant's collection. He died A.D. 398.

SIRIES (Violante Beatrice), a celebrated Italian paintress, born at Florence in 1710. She became the disciple of Fratellini, then in high esteem, and made great progress under him, in crayons and water colors. She afterwards went to France, where she acquired the art of painting in oil, and executed several portraits of the nobility. On her return to Florence she was highly patronised by the grand duke. One of her chief performances is a picture of the whole imperial family.

SIRIUM, in botany, a genus of plants belonging to the class of tetrandria and order of monogynia. The calyx is quadrifid; there is no corolla; the nectarium is quadriphyllous and crowning the throat of the calyx; the germen is below the corolla; the stigma is trifid, and the berry trilocular. There is only one species. *S. myrtifolium*, the myrtle-leaved sirium.

SIRIUS [Lat.], the dogstar, a bright star in the constellation of Canis. See CANICULA.

SIRLET (Flavius), an eminent Roman engraver on precious stones. His Iaocon and representations in miniature of antique statues at Rome are very valuable and scarce. He died in 1737.

SIRMION, or SIRMION, an ancient and celebrated town of Scelavonia, capital of a county so named. The emperor Probus was born and killed in it. See PROBUS and ROME. In 270 the emperor Claudius II. died in it of the plague. In 1668 the Imperialists drove the Turks out of it. It is now ruinous, though a bishop's see, founded so early as the reign of Trajan. It is seated on the Bosweth, near the Save, forty-two miles south-east of Esseck, and twenty-seven north-west of Belgrade. Long.  $20^{\circ} 19' E.$ , lat.  $45^{\circ} 13' N.$

SIRMOND (James), a learned French Jesuit, the son of a magistrate, born at Riom in 1559. After studying at the college of Billom, he joined the society in 1576. In 1588 he began to trans-

late the works of the Greek fathers, and to write notes upon Apollinaris Sidonius. In 1590 his general Aquaviva sent for him to Rome to be his secretary; which office he executed successfully for sixteen years; visiting libraries, studying antiquities, and consulting MSS. He also assisted cardinal Baronius in his Ecclesiastical Annals. He returned to Paris in 1606, where he published many works. Louis XIII. appointed him his confessor in 1637. In 1645 he returned to assist at the election of a new general. He spent much of his time in collecting the works of the writers of the middle age, which he published with notes. His whole works amounted to fifteen volumes folio, of which five are entirely his own. He died at Rome 7th of October, 1651, aged ninety-two.

SIROCCO, *n.s.* Ital. *sirocco*; Lat. *syrus ventus*. The south-east or Syrian wind.

Forth rush the levant and the ponent winds,  
Eurus and Zephyr, with their lateral noise,  
*Sirocco* and Libecchio. Milton.

The SIROCCO, or SCIROCHO, is a periodical wind which generally blows in Italy and Dalmatia every year about Easter. It blows from the south-east by east; it is attended with heat but not rain; its ordinary period is twenty days, and it usually ceases at sun-set. When the sirocco does not blow in this manner, the summer is almost free from westerly winds, whirlwinds, and storms. This wind is prejudicial to plants, drying and burning up the buds; though it hurts not men any otherwise than by causing an extraordinary weakness and lassitude; inconveniences that are fully compensated by a plentiful fishing, and a good crop of corn on the mountains. In summer, when the westerly wind ceases for a day, it is a sign that the sirocco will blow the day following, which usually begins with a sort of whirlwind.

SIROPUM, an ancient town of Egypt, mentioned by Pliny, supposed to be modern Siwa.

SIRRAH, *n.s.* Sir, ha!—Minshev. A compellation of reproach and insult.

*Sirrah*, there's no room for faith, troth, or honesty, in this bosom of thine. Shakspeare. Henry IV.

It runs in the blood of your whole race, *sirrah*, to hate our family. L'Estrange.

Guess how the goddess greets her son, Prior.  
Come hither, *sirrah*; no, begone.

SIR'OP, *n.s.* { Arab. *sirop* or *shrob*; Teut. *Sir'up*, } syrup; barb. Lat. *syrupus*. The *Sir'uped*, *adj.* } juice of vegetables boiled with sugar: sweet like syrup.

Shall I, whose ears her mournful words did seize,  
Her words in *sirup* laid of sweetest breath,  
Relent? Sidney.

Not poppy, nor mandragora,  
Nor all the drothy *sirups* of the world,  
Shall ever med'cine thee to that sweet sleep,  
Which thou owedest yesterday. Shakspeare. Othello.

Yet when there haps a honey fall,  
We'll lick the *syrup* leaves:  
And tell the bees that theirs is gall. Drayton.

And first, behold this cordial julap here,  
That flames and dances in his crystal bounds,

With spirits of balm, and fragrant *syrops* mixt. Milton.

Apples are of a *syrupy* tenacious nature. Mortimer.  
Those expressed juices contain the true essential

salt of the plant; for if they be boiled into the consistence of a *sirup*, and set in a cool place, the essential salt of the plant will shoot upon the sides of the vessels.

*Arbutusnot.*

SISACHTHIA, in attic antiquity; 1. A law instituted by Solon, for the remittance of all debts. 2. A solemn sacrifice instituted in commemoration of that law.

SISE, n.s. Contracted from assize.

You said, if I returned next size in Lent,  
I should be in remitter of your grace. *Donne.*

SISERA, a general of the Canaanites, under king Jabin II., who was defeated by the Israelites under Deborah and Barak, with great slaughter of his troops, and obliged to fly for refuge to Jael, the wife of Heber, the Kenite, who was at peace with Jabin, but who treacherously murdered him, while sleeping in the confidence of her protection. It is impossible to vindicate this action of Jael's, unless upon the general principle that it is lawful to rid the world of oppressors by any means. Deborah, indeed, praises and pronounces a blessing upon her for it, in the popular song she composed after the victory (Jud. v. 24); but, though she was undoubtedly an inspired prophetess, we are not certain if in this composition she was inspired by any thing but her patriotic zeal for her countrymen, now restored to their liberty, after a tedious oppression of twenty years. That this act of Jael's, whereby the victory of the Israelites over their oppressors was completed, was ordained by the Almighty is evident from the context (ch. iv. 9), where it was foretold by Deborah; but this does not justify the action any more than the treachery of Judas, which was also foretold many centuries before it happened, but is no where vindicated on that account.

SISINNIUS, pope of Rome, was a native of Syria, who rose through various gradations in the clerical line, till at last, on the death of John VII. in 708, he was elected pope, but did not enjoy the triple crown three weeks, dying on the twentieth day after his election.

SISON, bastard stone parsley, in botany, a genus of plants belonging to the class of pentandria, and to the order of dignya; and in the natural system arranged under the forty-fifth order, umbellatae. The fruit is egg-shaped and streaked; the involucra are subtetraphyllous. There are seven species. 1. S. ammi. 2. S. ammonium, common bastard parsley, or field stone-wort, is a biennial plant about three feet high, growing wild in many places of Britain. Its seeds are small, striated, of an oval figure and brown color. Their taste is warm and aromatic. Their whole flavor is extracted by spirit of wine, which elevates very little of it in distillation; and hence the spirituous extract has the flavor in great perfection, while the watery extract has very little. A tincture drawn with pure spirit is of a green color. The seeds have been esteemed aperient, diuretic, and carminative; but are now little regarded. 3. S. Canadense, the Canada bastard parsley, is common in Canada. 4. S. falsum, the false bastard parsley. 5. S. inundatum, least water parsley. The stem is about eight or ten inches high, branched and creeping; the leaves below the

water are capillary; above it are pinnated; the umbels are bifid. It grows wild in our ditches and ponds. 6. S. segetum, corn parsley or honeywort. The stems are numerous, slender, striated, branched, and leaning; the leaves are pinnated; the pinnae are oval, pointed, and serrated, six or eight pair, and one at the end; the umbels small and drooping; the flowers minute and white. It grows in our corn-fields and hedges. 7. S. verticillatum, verticillate sison, has small leaves in whorls, and capillary; the stem is two feet with few leaves; the common umbel is composed of eight or ten rays, the partial of eighteen or twenty; both involucra are composed of five or six oval acute foliola; the flowers are all hermaphrodite, and the petals white. It grows wild in Britain.

SISSOPOLI, or SIZEBOLI, a town of European Turkey, the ancient Apollonia, situated on a point of land which projects into the Black Sea. It has the best roadstead in the gulf, where men of war may anchor in perfect safety. The inhabitants are Greeks, and the chief articles of trade are wine and wood. 115 miles N. N.W. of Constantinople.

SISTER, n.s. *Sax. frœfæter; Belg. zus-*

*SISTERHOOD,* *ter.* A female child of the

SISTERLY, *adv.* *S*ame parents; the correlative of brother; a female of the same kind or nature; hence a woman of the same Christian faith; sisterhood is, the state or duty of a sister; a number of women of the same order: sisterly, like a sister.

Thy sister in law is gone back unto her people: return thou after thy sister in law. *Ruth i. 15.*

If a brother or sister be naked, and destitute of food, and you say unto them, Depart in peace, be you warmed and filled; notwithstanding, you give them not those things which are needful to the body what doth it profit? *James ii. 15.*

He chid the sisters,  
And bade them speak to him. *Shakspeare. Macbeth.*

I speak,  
Wishing a more strict restraint  
Upon the sisterhood, the votarists of Saint Clare. *Shakspeare.*

After much debate ment,  
My sisterly remorse confutes mine honour,

And I did yield to him. *Id*

She abhorred  
Her proper blood, and left to do the part  
Of sisterhood, to do that of a wife. *Daniel's Civil War.*

The women, who would rather wrest the laws  
Than let a sister-plaintiff lose the cause,  
As judges on the bench more gracious are,  
And more attent to brothers of the bar,  
Cried, one and all, the suppliant should have right;  
And to the grandam he adjudged the knight. *Dryden.*

A woman who flourishes in her innocence, amidst that spite and rancour which prevails among her exasperated sisterhood, appears more amiable. *Addison's Freeholder.*

There grew too olives closest of the grove,  
With roots entwined, and branches interwove:  
Alike their leaves, but not alike they smiled  
With sister-fruits one fertile, one was wild. *Pope.*

SISTOVA, SZISTOW, or SCHISTAB, a large town of Bulgaria, on the right bank of the Danube. It has a citadel, and its trade, promoted by the navigation of the Danube, consists chiefly

in leather and cotton. A number of the traders are Armenians and Greeks. In history it is remarkable for the conference held here, in 1791, between the Turks and Austrians. Inhabitants 20,000. Twenty-five miles east of Nicopoli.

**SISTRUM**, or **CISTRUM**, an ancient musical instrument used by the priests of Isis and Osiris. It is described by Spon as of an oval form, in manner of a racket, with three sticks traversing it breadthwise; which playing freely, by the agitation of the whole instrument, yielded a kind of sound which to them seemed melodious. Mr. Malcolm takes it to be no better than a kind of rattle. Oisilius observes that the sistrum is found represented on several medals, and on talismans.

**SISYMBRIUM**, water cresses, in botany, a genus of plants belonging to the class of tetrady-namia, and to the order of siliquosa; and in the natural system ranged under the thirty-ninth order, siliquosæ. The siliqua, or pod, opens with valves somewhat straight. The calyx and corolla are expanded. There are twenty-nine species, of which eight are natives of Britain: viz.

1. *S. amphibium*, water radish. The stem is firm, erect, and two or three feet high; the leaves are pinnatifid and serrated; the flowers are yellow and in spikes; the pods are somewhat oval and short. It grows in water.

2. *S. irio*, broad leaved rocket or hedge-mustard; the stem is smooth, and about two feet high; the leaves are broad, naked, pinnated, and halberd shaped at the end; the flowers are yellow and the pods erect. It grows on waste ground.

3. *S. monense*, yellow rocket. The stem is smooth, and about six or eight inches high; the leaves are pinnatifid; the pinnae remote, generally seven pair; the flower is yellow; the petals entire; the calyx is closed. It grows in the Isle of Man.

4. *S. murale*, or wall rocket. The stems are rough, and about eight inches high; the leaves grow on foot-stalks, lance-shaped, smooth, sinuated, and serrated; the flowers are yellow; the pods a little compressed, and slightly carinated. It grows on sandy ground in the North, Anglesey, &c.

5. *S. nasturium*, common water cress, grows on the brinks of rivulets and water-ditches. The leaves have from six to eight pair of smooth, succulent, and sessile pinnae; the flowers are small and white, and grow in short spikes or tufts. The leaves have a moderately pungent taste, emit a quick penetrating smell, like that of mustard seed, but much weaker. Their pungent matter is taken up both by watery and spirituous menstrua, and accompanies the aqueous juice, which issues copiously upon expression. It is very volatile, so as to arise in great part in distillation with rectified spirit, as well as with water, and almost totally to exhale in drying the leaves, or inspissating by the gentlest heat to the consistence of an extract, either the expressed juice, or the watery or spirituous tinctures. Both the inspissated juice, and the watery extract, discover to the taste a saline impregnation, and, in keeping, throw up crystalline efflorescences to the surface. On distilling considerable quanti-

ties of the herb with water, a small proportion of a subtile, volatile, very pungent oil is obtained. Water cresses obtain a place in the *materia medica* for their antiscorbutic qualities, which have been long very generally acknowledged by physicians. They are also supposed to purify the blood and humors, and to open visceral obstructions. They are nearly allied to scurvy grass, but are more mild and pleasant, and for this reason are frequently eaten as salad. In the *pharmacopœias* the juice of this plant is directed with that of scurvy-grass and Seville oranges; and Dr. Cullen has remarked that the addition of acids renders the juices of the plantæ siliquosæ more certainly effectual, by determining them more powerfully to an acescent fermentation.

6. *S. silvestre*, water-rocket. The stem is weak, branched, and above a foot high. The leaves are pinnated; the pinnae lance-shaped and serrated; the flowers small and yellow; and grow frequently in shallow water.

7. *S. sophia*, flixweed. The stem is firm, branched, and two or three feet high; the leaves are multifid; the segments are narrow; the flowers are yellow; the petals much less than the calyx; the pods are long, stiff, curved, without style, and erect; the seeds are minute and yellow. It grows on walls, waste ground, &c.

8. *S. terrestre*, land rocket, or annual water radish. The leaves are pinnatifid; the pods are filled with seed; the root is annual, and white; the stem is angular, red-green, and smooth.

**SISYPHUS**, in fabulous history, the son of Æolus and Enarete, and brother of Athamas and Salmoneus. He married Merope, one of the Pleiades, who bore him Glauces. He built Ephyra in Peloponnesus, called afterwards Corinth, and was a very crafty man. Others say that he was a Trojan secretary, who was punished for discovering secrets of state; and others again that he was a notorious robber, killed by Theseus. He debauched his niece Tyro, who killed the two sons she had by him. All the poets agree that he was punished in Tartarus for his crimes, by rolling a great stone to the top of a hill, which constantly recoiled, and rolling down incessantly, renewed his labor, without end.

**SISYRINCHIUM**, in botany, a genus of plants belonging to the class of gynandria, and order of triandria; natural order sixth, ensatae. The spatha is diphyllous; there are six plane petals: caps. trilocular and inferior. There are two species: 1. *S. Bermudiana*, a native of Bermuda; and 2. *S. palmifolium*, with leaves resembling those of the palm tree.

**SIT**, *v. n. & v. a.* { *Pret.* I sat. *Sax. firian*;   
**SITTER**, *n. s.* { *Swed. setta*; *Goth. sita*, *sit*.  
**SITTING.** { *Tan.* To rest on the buttocks; be in any state of rest or quiet; rest as a weight; brood; settle; abide; be adjusted; ordered; settled; convened; placed at table; be in any solemn assembly as a member; taking *down*, *out*, and *up*, after it: as a verb active, to keep a seat upon; place on a seat: the noun substantives corresponding.

Shall your brethren go to war, and shall ye sit here? *Numbers.*

Asses are ye that sit in judgment. *Judges v. 10.*  
Thou knowest my down-sitting and mine uprising.  
*Psalms.*

As the partridge sitteth on eggs, and hatcheth them not, so he that getteth riches not by right, shall leave them in the midst of his days. *Jer. xvii. 11.*

The judgment shall sit, and take away his dominion. *Daniel.*

He that was dead sat up, and began to speak. *Luke vii.*

Whether is greater, he that sitteth at meat, or he that serveth. *Id. xxii. 27.*

Three hundred and twenty men sat in council daily. *1 Mac.*

From besides Tanais, the Goths, Huns, and Getes sat down. *Spenser.*

This new and gorgeous garment, majesty, sits not so easy on me as you think. *Shakspeare.*

Heaven knows

By what by-paths and indirect crooked ways I met this crown; and I myself know well How troublesome it sate upon my head; To thee it shall descend with better quiet. *Id.*

I should be still

Plucking the grass to know where sits the wind: Peering in maps for ports. *Id. Merchant of Venice.*

Your brother's death sits at your heart. *Shakspeare.*

The happiest youth viewing his progress through What perils past, what crosses to ensue, Would shut the book, and sit him down and die. *Id.*

I'll write you down; The which shall point you forth at every sitting, What you must say. *Id.*

The egg laid, and severed from the body of the hen, hath no more nourishment from the hen; but only a quickening heat when she sitteth. *Bacon's Natural History.*

As a farmer cannot husband his ground so well, if he sit at a great rent; so the merchant cannot drive his trade so well, if he sit at great usury. *Bacon.*

He came to visit us, and, calling for a chair, sat him down, and we sat down with him. *Id.*

The Turks are great sitters, and seldom walk, whereby they sweat less, and need bathing more. *Id.*

I wish it may be at that sitting concluded, unless the necessity of the time press it. *Id.*

Be courtly, And entertain, and feast, sit up, and revel; Call all the great, the fair, and spirited dames Of Rome about thee, and begin a fashion Of freedom. *Ben Jonson.*

Their wives do sit beside them, carding wool. *May's Virgil.*

Some sit up late at winter-fires, and fit Their sharp-edged tools. *May.*

When we sit down to our meal, we need not suspect the intrusion of armed uninvited guests. *Decay of Piety.*

They are glad, rather than sit out, to play very small game, and to make use of arguments, such as will not prove a bare inexpediency. *Bishop Sanderson's Judgment.*

When God lets loose upon us a sickness, if we fear to die, then the calamity sits heavy on us. *Taylor.*

Nor would the enemy have sat down before it, till they had done their business in all other places. *Clarendon.*

That this new comer, shame, There sit and not reproach us. *Milton.*

Down to the golden Chersonese, or where The Persian in Ecbatan sate. *Id.*

Why sit we here each other viewing idly? *Id.*

Thus fenced, But not at rest or ease of mind, They sat them down to weep. *Id.*

The toss and fling, and to be restless, only galls our sores, and makes the burden that is upon us sit more uneasy. *Tillotson.*

Aloft, in awful state, The godlike hero sat

On his imperial throne. *Dryden.*

When Thetis blushed in purple not her own, And from her face the breathing winds were blown; A sudden silence sate upon the sea, And sweeping oars with struggling urged their way. *Id.*

Few good pictures have been finished at one sitting; neither can a good play be produced at a heat. *Id.*

Your preferring that to all other considerations, does, in the eyes of all men, sit well upon you. *Locke.*

Most children shorten that time by sitting up with the company at night. *Id.*

For the understanding of any one of St. Paul's epistles, I read it all through at one sitting. *Id.*

The oldest hens are reckoned the best sitters; and the youngest the best layers. *Mortimer's Husbandry.*

Assert, ye fair ones, who in judgment sit, Your ancient empire over love and wit. *Rowe.*

One is under no more obligation to extol every thing he finds in the author he translates, than a painter is to make every face that sits to him handsome. *Garth.*

She mistakes a piece of chalk for an egg, and sits upon it in the same manner. *Addison.*

One council sits upon life and death, the other is for taxes, and a third for the distributions of justice. *Id.*

The court was sat before Sir Roger came, but the justices made room for the old knight at the head of them. *Id.*

Whilst the hen is covering her eggs, the male bird takes his stand upon a neighbouring bough, and amuses her with his songs during the whole time of her sitting. *Id.*

Hardly the muse can sit the head-strong horse, Nor would she, if she could, check his impetuous force. *Prior.*

Here we cannot sit down, but still proceed in our search, and look higher for a support. *Rogers.*

Suppose all the church-lands were thrown up to the laity; would the tenants sit easier in their rents than now? *Swift.*

The ships are ready and the wind sits fair. *A. Philips.*

SITA, in Hindoo mythology, is a celebrated incarnation of the goddess Lakshmi, consort of Vishnu, in his avatara, or descent in the form of Rama. In the language of the fable, she was his sakti, or energy; and numberless poems have been written in honor of her beauty and merits. She is one of the most popular goddesses of the Hindoo Pantheon, and is indeed one of the most virtuous and interesting characters in their legends. Her history and that of her lord forms the subject of the RAMAYANA, an epic poem, grounded, like the Iliad, on a rape. As noticed in that article, and RAVENA, the carrying off, by the treachery of the tyrant of that naine, the virtuous spouse of Rama, roused that hero to the mighty deeds necessary for her rescue from the

hands of her powerful persecutor, and celebrated in the fine poem of Valmiki; and, as noticed above, in numberless others of secondary and minor fame. The outline of Sita's history is : the childless rajah Janaka, having duly propitiated the gods, was led to the benevolent adoption of a female child about five years old, found enclosed in a box by a Brahmin in a field. She was called Sita, from sit or set, meaning a furrow or field ; and Janeki, after her adoptive father. Sita, however, means also fair, and may be thence derived, and is in this sense, of denoting beauty, given also to Parvati and Saraswati, consorts of the other two divine persons of the Hindoo triad. She proved to be an incarnation of Lakshmi, as before noticed : and on attaining maturity was won by Rama, in a contest of archery with many sovereigns, ambitious of obtaining a prize of such incomparable beauty. This story, as it is related in the Ramayana, reminds us of the unyielding bow of Ulysses ; as none but Rama had power to accomplish the required and ordained feat ; which was piercing the eye of a fish whirling on a pin fixed on a high pole ; and not looking at the mark, but at its reflection in a vessel of oil placed on the ground. The ten-headed twenty-handed tyrant Ravenna had previously failed. Burning with the rage of disappointed desire, the tyrant carried her off ; and, having been in his power, her purity might be possibly suspected ; she therefore plunged into the flames, where, defended by Pavaka, the regent of fire, her incombustibility attested her innocence. She was of course triumphantly restored to her overjoyed husband. In the Ramayana she is described as ' endued with youth, beauty, goodness, sweetness, and prudence ; an inseparable attendant on her lord, as the light on the moon : the beloved spouse of Rama, dear as his own soul ; formed by divine illusion, amiable, and adorned with every charm ;' and always held forth as an example of conjugal faith and affection.

While confined on the island of Lanka, or Ceylon, and persecuted by the addresses of its tyrannical sovereign, the anguish and lamentation of Sita are copious subjects of hyperbole for Hindoo poets. Travellers are still shown a lake or pool, called Sita-koonda, said to have originated in the floods of tears shed by the captive beauty. This extravaganza was not lost on our early missionaries and travellers. Ceylon being with them the garden of Eden, they find Adam's Peak, Adam's Bridge, &c., called Rama's by the natives. Eve personates Sita in respect to this pool. Sir John Mandeville notices it in his quaint way. Describing Ceylon, he has fair scope for his poetical exuberance. ' In that isle is a gret mountayne, and in mydd place of the mount is a gret lake in a full fayre pleyne, and there is gret plentie of watre. And thei of the contrie seyn that Adam and Eve wepten upon that mount 100 zeer, when thei were dryven out of Paradys. And that watre thei seyn is of here teres ; for so much watre they wepten that made the foreseide lake.' Sir John died in 1372.

A beautiful tree, called asoka by Sanscrit botanists, bears a mythological reference to Sita. She was confined in a grove of those trees, whose

name is derived from grief, or lamentation. It is hence, perhaps, also sacred to the god of tears, or the avenging Siva. Asoka, indeed, rather from its privative initial, denotes the absence of grief, equivalent to grief-dispeller ; thus named possibly from its beauty, so greatly admired by a poetical and tasteful people. A numerous sect of Hindoos adore Sita as Lakshmi herself. It is a branch of the sect of Ramanuj. She is said to have borne Rama two sons, Kushi and Lava, who were great orators and minstrels ; but they are seldom heard of, except in legends immediately relating to their families.

SITANG, a large river of the Birman empire, in Pegu. It rises in mountains about 20° N. lat., passes the ancient city of Pegu, and falls into the gulf of Martaban : on account of shoals, and very strong tides, it is excessively unsafe.

SITANTA, a fabulous mountain, in which is described the terrestrial abode of the god Indra, the Hindoo regent of the firmament. In the Hindoo Pantheon, the wonderful mountain Meru is described from the Puranas. On one of its three peaks is Kailasa, the Olympus of Siva ; and on another is the Swerga, or paradise of Indra. But his terrestrial abode is on Sitanta, a part probably of Meru ; and it may be amusing to see in what the delights of Hindoo gods are supposed, by their sacred writers, to consist. Sitanta is ' skirted by a most delightful country, well watered, and enlivened by the harmonious noise of the black bee and frogs. There, among immense caves, is the Kridavana, or place of dalliance of Mahendra ; where knowledge and the completion of our wishes are fully acknowledged. There is the great forest of the Pariyateka tree of the king of the gods, known through the three worlds ; and the whole world sings his praise from the Veda. Such is the place of dalliance of him with a thousand eyes, or Indra. In this charming grove of Sakra, or Indra, the gods, the danavas, the snakes, yakshas, rakshas, guhyas or kuveras, gandharvas, live happy ; as well as numerous tribes of Upsara, fond of sport.' — P. 270.

SITE, n. s. Lat. *situs*. Situation; local position; posture.

Manifold streams of goodly navigable rivers, as so many chains environed the same site and temple.  
Bacon.

The city self he strongly fortifies,  
Three sides by site it well defenced has. Fairfar.

If we consider the heart in its constituent parts, we shall find nothing singular, but what is in any muscle. 'Tis only the site and posture of their several parts that give it the form and functions of a heart.

Bentley.

Before my view appeared a structure fair ;  
Its site uncertain, if on earth or air. Pope.

And leaves the semblance of a lover fixed  
In melancholy site, with head declined,  
And love-dejected eyes. Thomson's Spring.

SITH, adv. Sax. *frīðe*. Since ; seeing that. Obsolete.

What ceremony of odours used about the bodies of the dead ! after which custom, notwithstanding, *sith* it was their custom, our Lord was contented that his own most precious blood should be intombed.

Hooke.

The foolis man therat woxe wondrous blith,  
And humbly thanked him a thousand sithe.

Spenser.

This over-running and wasting of the realm was  
the beginning of all the other evils which sithence  
have afflicted that land. *Id. State of Ireland.*

I thank you for this profit, and from hence  
I'll love no friend, sith love breeds such offence.

Shakspeare.

**SITHE**, *n. s.* Sax. *riðe*. This word, says Dr. Johnson, is very variously written; I have chosen the orthography which is at once most simple and most agreeable to etymology. The instrument of mowing; a crooked blade joined at right angles to a long pole.

Let fame, that all hunt after in their lives,  
Live registered upon our brazen tombs;  
And then grace us in the disgrace of death:  
When, sp̄t of cormorant devouring time,  
The endeavour of this present breath may buy  
That honour which shall bate his scythe's keen edge,  
And make us heirs of all eternity. *Shakespeare.*

Time is commonly drawn upon tombs, in gardens, and other places, an old man, bald, winged, with a sithe and an hour-glass. *Peacham on Drawing.*

There rude impetuous rage does storm and fret;  
And there, as master of this murdering brood,  
Swinging a huge sithe, stands impartial death,  
With endless business almost out of breath.

*Crushaw.*

While the milk-maid singeth blithe,  
And the mower whets his scythe. *Milton.*

The brazen trumpets kindle rage no more;  
But useless lances into sythes shall bend,  
And the broad faulchion in a ploughshare end.

*Popæ.*

But, Stella, say what evil tongue  
Reports you are no longer young!  
That Time sits with his sythe to mow  
Where erst sat Cupid with his bow? *Swift.*

I drew my scythe in sic a fury,  
I near-hand cowpit wi' my hurry,  
But yet the bauld Apothecary

Withstood the shock;

I might as well hae tried a quarry

O' hard whin rock. *Burns.*

The glass that bids man mark the fleeting hour,  
And Death's own sithe would better speak his power. *Cowper.*

What should be, and what was an hourglass once,  
Becomes a dicebox, and a billiard mace  
Well does the work of his destructive sithe. *Id.*

**SITONES**, an ancient people of Germany, or as others say of Norway. *Tacit. de Germ. 45.*

**SITOΦΥΛΑΞ** [Gr. Σιτοφύλαξ, from *sitōs*, corn, and φύλαξ, keeper], in antiquity, an Athenian magistrate, who had the superintendance of the corn, and was to take care that nobody bought more than was necessary for the provision of his family. By the Attic laws, particular persons were prohibited from buying more than fifty measures of wheat a man; and, that such persons might not purchase more, the sitophylax was appointed to see the laws properly executed. It was a capital crime to prevaricate in it. There were fifteen of these sitophylaces, ten for the city, and five for the Pireæus.

**SITTA**, the nuthatch, in ornithology, a genus belonging to the class of aves, and order of picæ. It is thus characterised by Dr. Latham. The bill is for the most part straight; on the lower mandible there is a small angle; nostrils small, co-

vered with bristles reflected over them; tongue short, horny at the end, and jagged; toes placed three forward and one backward: the middle toe joined closely at the base to both the outermost: back toe as large as the middle one.—There are eleven species, viz.—1. S. Cafra; 2. Canadensis; 3. Carolinensis; 4. Chloris; 5. Europæa; 6. Jamaicensis; 7. Longirostra; 8. Major; 9. Nievia; 10. Pusilla; 11. Surinamensis. Of these the following are the most remarkable:

1. S. Europæa, the European nuthatch, is in length nearly five inches and three-quarters, in breadth nine; the bill is strong and straight, about three-fourths of an inch long; the upper mandible black, the lower white; the irides are hazel; the crown of the head, back, and coverts of wings, of a fine bluish gray; a black stroke passes over the eye from the mouth: the cheeks and chin are white; the breast and belly of a dull orange color; the quill-feathers dusky; the wings underneath are marked with two spots, one white at the root of the exterior quills, the other black at the joint of the bastard wing; the tail consists of twelve feathers; the two middle are gray, the two exterior feathers tipped with gray; then succeeds a transverse white spot; beneath that the rest is black: the legs are of a pale yellow; the back toe very strong, and the claws large. The female is like the male, but less in size, and weighs commonly five, or at most six drachms. The eggs are six or seven, of a dirty white, dotted with rufous; these are deposited in some hole of a tree, frequently one which has been deserted by a woodpecker, on the rotten wood mixed with a little moss, &c. If the entrance be too large, the bird nicely stops up part of it with clay, leaving only a small hole for itself to pass in and out by. While the hen is sitting, if any one puts a bit of stick into the hole, she hisses like a snake, and is so attached to her eggs that she will sooner suffer any one to pluck off her feathers than fly away. During the time of incubation, the male supplies her with sustenance, with all the tenderness of an affectionate mate. These birds run up and down the bodies of trees, like the woodpecker tribe; and feed not only on insects, but nuts, of which they lay up a considerable provision in the hollows of trees. ‘It is a pretty sight,’ says Mr. Willoughby, ‘to see her fetch a nut out of her hoard, place it fast in a chink, and then, standing above it with its head downwards, striking it with all its force, break the shell, and catch up the kernel. It is supposed not to sleep perched on a twig like other birds; for, when confined in a cage, it prefers sleeping in a hole or corner. When at rest it keeps the head down. In autumn it begins to make a chattering noise, being silent for the greatest part of the year. Dr. Plott tells us that this bird, by putting its bill into a crack in the bough of a tree, can make such a violent sound as if it was rending asunder, so that the noise may be heard at least 240 yards.’

2. S. longirostra, the great hook-billed nuthatch, is the largest of the known nuthatches: its bill, though pretty straight, is inflated at the middle, and a little hooked at the end; the nostrils are round; the quills of the tail and of the

wings edged with orange on a brown ground; the throat white; the head and back gray; the under side of the body whitish. It was observed by Sloane in Jamaica. Its total length is about seven inches and a half; the bill is eight lines and one-third; the upper mandible a little protuberant near the middle; the mid toe eight lines and one-third; the alar extent eleven inches and a quarter; the tail about twenty-three lines.

3. S. Surinamensis, the spotted or Surinam nuthatch, is another American nuthatch, with a hooked bill; but differs from the preceding in size, plumage, and climate: it inhabits Dutch Guiana. The upper side of the head and of the body is of a dull ash-color; the superior coverts of the wings of the same color; but terminated with white; the throat white; the breast and all the under side of the body cinereous, and more dilute than the upper side, with white streaks scattered on the breast and sides, which forms a sort of speckling; the bill and legs brown. Total length about six inches; the bill an inch; the tarsus seven lines and a half; the mid toe eight or nine lines, and longer than the hind toe, whose nail is the strongest; the tail about eighteen lines; consisting of twelve nearly equal quills, and exceeds the wings thirteen or fourteen lines.—Buffon.

SITTACE, a town of Assyria.—Plin. vi. c. 27.

SITTINGBOURNE, a parish in Milton hundred and lathe of Seray, Kent, one mile from Milton, and forty east by south from London; consisting of one long and wide street. This is a place of great antiquity, and was formerly a market town. It is now principally supported by travellers proceeding to and from Dover, Fairs, Whit-Monday, and October 10th. The church is a large, handsome building; and is a vicarage, value £10. Patron, the archbishop of Canterbury.

SITUATE, part. adj. } From Latin *situs*.

SITUATION, n. s. } Placed with respect to anything else: the noun substantive corresponding.

He was resolved to chuse a war, rather than to have Bretagne carried by France, being so great and opulent a duchy, and *situate* so opportunely to annoy England. *Bacon.*

Earth hath this variety from heaven,  
Of pleasure *situate* in hill and dale. *Milton.*

The eye is a part so artificially composed, and commodiously *situate*, as nothing can be contrived better for use, ornament, or security. *Ray on the Creation.*

Prince Cesarin has a palace in a pleasant *situation*, and set off with many beautiful walks. *Addison on Italy.*

Though this is a *situation* of the greatest ease and tranquillity in human life, yet this is by no means fit to be the subject of all men's petitions to God. *Roger's Sermons.*

SITUS, in algebra and geometry, denotes the situation of lines, surfaces, &c. Wolfius delivers some things in geometry which are not deduced from the common analysis, particularly matters depending on the *situs* of lines and figures. Leibnitz has even founded a particular kind of analysis upon it, called calculus *situs*.

SIVA, or SHEEVAH, a name given by the Hindoos to the Supreme Being, considered as the

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avenger or destroyer. Sir William Jones has shown that in several respects the character of Jupiter and Siva are the same. As Jupiter overthrew the Titans and giants, so did Siva overthrow the Daityas or children of Diti, who frequently rebelled against heaven; and as during the contest the god of Olympus was furnished with lightning and thunderbolts by an eagle, so Brahma, who is sometimes represented riding on the garuda, or eagle, presented the god of destruction with fiery shafts. Siva also corresponds with Pluto; for in a Persian translation of the Bhagavat, the sovereign of Patala, or the infernal regions, is the king of serpents, named Sesha-naga, who is exhibited in painting and sculpture with a diadem and sceptre, in the same manner as Pluto. There is yet another attribute of Siva or Maladéva, by which he is visible, distinguished in the drawings and temples of Bengal. To destroy, according to the Vedantis of India, the Sussis of Persia, and many philosophers of our European schools, is only to generate and reproduce in another form. Hence the god of destruction is holden in this country to preside over generation, as a symbol of which he rides on a white bull.

SIVAN, in Jewish chronology, the third month of the Jewish sacred year, and ninth of their civil; answering to part of our May and June. On the sixth was the feast of Pentecost; and on the fifteenth and sixteenth a festival for a victory of the Maccabees.

SIVANA SAMUDRA, a remarkable island in the river Cavery, province of Coimabetoor, Hindostan. It is nine miles in length, and contains a cataract, 150 feet perpendicular. This island was formerly connected to the opposite shore, by a stone bridge, which is now in ruins. There are also the remains of many Hindoo temples, and much sculpture; in one apartment there is an image of Vishnu, seven feet high, executed in the best style of Indian carving. The island is in general rocky.

SIVAS, or SIWAS, a considerable city of Asia Minor, the capital of a paehalic. It retains the name of Roum, or Rumiyyah, which formerly applied to the whole Turkish empire. Its general character is mountainous and woody, interspersed with fine valleys; and it contains the fine cities of Amasia, Tocat, and Trebisond. The town is situated on the river Kizil Irmak, not far from its source. It is dirty and ill built, and the strong castle by which it was formerly defended is in ruins. The inhabitants are described as coarse and rude; but travellers vary much as to their number. Not far from the town is a celebrated Armenian monastery. This place was originally called Castra, and afterwards Sebaste, in honor of Augustus. It is celebrated as being the theatre of the great contest between Bajazet and Timur, in which the former was finally defeated.

SIUM, water parsnip, in botany, a genus of plants belonging to the class of pentandria, and order dignya; natural order forty-fifth, umbellate. The fruit is a little ovoid, and streaked. The involucrum is polyphyllous, and the petals are heart-shaped. There are twelve species, viz. 1. S. Angustifolium; 2. Decumbens; 3. Falcata.

rica; 4. Græcum; 5. Japonicum; 6. Latifolium; 7. Ninsi; 8. Nodiflorum; 9. Repens; 10. Rigidus; 11. Sicus; 12. Sisarum. Of these the first three following are natives of Britain:

1. S. angustifolium, the narrow-leaved water parsnep, has pinnated leaves; the axillary umbels are pedunculated, and the general involucrum is pinnatifid. It grows in ditches and rivulets, but is not common.

2. S. latifolium, the great water parsnep, grows spontaneously in many places both of England and Scotland on the sides of lakes, ponds, and rivulets. The stalk is erect and furrowed, three feet high or more. The leaves are pinnated, with three or four pairs of large elliptic pinnae, with an odd one at the end, all serrated on the edges. The stalk and branches are terminated with erect umbels, which is the chief characteristic of the species. Cattle are said to have run mad by feeding upon this plant.

3. S. nodiflorum, reclining water parsnep, has pinnated leaves, but the axillary umbels are sessile. It grows on the sides of rivulets.

4. S. sisarum, the skirret, is a native of China, but has been long cultivated in Europe, particularly in Germany. The root is a bunch of fleshy fibres, each of which is about as thick as a finger, but very uneven, covered with a whitish rough bark, and has a hard core or pith running through the centre. From the crown of this bunch come several winged leaves, consisting of two or three pairs of oblong dentated lobes each, and terminated by an odd one. The stalk rises to about two feet, is set with leaves at the joints, and breaks into branches towards the top, each terminating with an umbel of small white flowers, which are succeeded by striated seeds like those of parsley. Skirrets come nearest to parsneps of any of the esculent roots, both for flavor and nutritive qualities. They are rather sweeter than the parsnep, and therefore to some palates are not altogether so agreeable. Mr. Margraaf extracted from half a pound of skirret root one ounce and a half of pure sugar.

SIUT, a considerable town of Upper Egypt, on the western bank of the Nile. The country round is exceedingly fertile: a great quantity of hemp is also cultivated, not for manufacture, but for the intoxicating quality which the smoked seed possesses. The inhabitants are chiefly Copts. They are employed in an extensive manufacture of blue cloth, and Siut is the rendezvous of the caravans which proceed from Egypt southwards into the interior of Africa, to Sennar and Darfur. Siut is the see of a Coptic bishop, and supposed to be the ancient Lycopolis.

SIX, *adj.*

SIX'PENCE, *n.s.*

SIX'SCORE, *adj.*

SIX'TEEN,

SIX'TEENTH,

SIXTH,

SIXTH'LY, *adv.*

SIX'TEETH, *adj.*

SIX'TY.

Fr. *six*. Twice three; one more than five: to be at six and seven is to be in a state of discord or fluctuation: the other compounds and derivatives seem obvious in the meaning.

The first lot came forth to Jehoiarib, the sixteenth to Immer. I Chron. xxiv. 14.

Sixscore and five miles it containeth in circuit.

*Sandy*.

All is uneven,

And every thing is left at six and seven. *Shakspeare*.

Where have you left the money that I gave you?

Oh!—sixpence that I had. *Id.*

You are more clement than vile men,

Who of their broken debtors take

A sixth, letting them thrive again. *Id.*

In 1588 there sat in the see of Rome a fierce thundering friar, that would set all at six and seven, or at six and five, if you allude to his name.

*Bacon*.

The crown of Spain hath enlarged the bounds thereof within this last sixscore years, much more than the Ottomans. *Id.*

It returned the voice thirteen times; and I have heard of others that it would return sixteen times. *Id.*

Sixty, living creatures have more diversity of organs than plants. *Id.*

When the boats were come within sixty yards of the pillar, they found themselves all bound, and could go no farther. *Id.*

If men lived but twenty years, we should be satisfied if they died about sixteen or eighteen. *Taylor*.

Let the appearing circle of the sun be three feet diameter, and the time of one entire circulation of it the sixtieth part of a minute, in a whole day there will be but 86,400 such parts. *Digby on Badges*.

What blinder bargain ere was driven,  
Or wager laid at six and seven. *Hudibras*.

That of six hath many respects in it, not only for the days of the creation, but its natural consideration, as being a perfect number.

*Brown's Vulgar Errors*.

No incident in the piece or play but must carry on the main design: all things else are like six fingers to the hand, when nature can do her work with five.

*Dryden*.

John once turned his mother out of doors, to his great sorrow; for his affairs went on at sixes and sevens. *Arbuthnot*.

Only the other half would have been a tolerable seat for rational creatures, and five sixths of the whole globe would have been rendered useless.

*Cheyne's Philosophical Principles*.

The wisest man might blush,  
If O—loved sixpence more than he. *Pope*.

The goddess would no longer wait;  
But, rising from her chair of state,  
Left all below at six and seven,  
Harnessed her doves, and flew to heaven. *Swift*.

SIX CLERKS. The office of "six clerks" has lately been abolished. The business of this office was to enrol commissions, pardons, patents, warrants, &c., which pass the great seal, and to transact and file all proceedings by bill, answer, &c. The clerks were anciently clerici, and forfeited their places if they married; but, when the constitution of the court began to alter, a law was made to permit them to marry. Stat. 14 and 15 Hen. VIII. cap. 8. They were also solicitors for parties in suits depending in the court of chancery. Under them were six deputies and sixty clerks, who, with the under clerks, did the business of the office. *418*

SIX NATIONS, Indians who live on the banks of the Niagara. Each nation was, at one time, divided into three tribes, of which the principal were called the turtle tribe, the wolf tribe, and the bear tribe. Each tribe has two or more

chiefs, called sachems; and this distinction is hereditary in the family, but descends along the female line: for instance, if a chief dies, one of his sister's sons, or one of his own brothers, will be appointed to succeed him. Among these no preference is given to proximity or primogeniture; but the sachem, during his life time, pitches upon one whom he supposes to have more abilities than the rest; and in this choice he frequently consults the principal men of the tribe. If the successor happens to be a child, the offices of the post are performed by some of his friends until he is of sufficient age to act himself. Each of these posts of sachem has a name peculiar to it, and which never changes, as it is always adopted by the successor; nor does the order of precedence of each of these names or titles ever vary. Nevertheless, any sachem, by abilities and activity, may acquire greater power and influence in the nation than those who rank before him in point of precedence; but this is merely temporary, and dies with him. Each tribe has one or two chief warriors; which dignity is also hereditary, and has a peculiar name attached to it. These are the only titles of distinction which are permanent in the nation; for although any Indian may, by superior talents, either as a counsellor or as a warrior, acquire influence in the nation, yet it is not in his power to transmit this to his family. The Indians have also their great women as well as their great men, to whose opinions they pay great deference; and this distinction is also hereditary in families. They do not sit in council with the sachems, but have separate ones of their own. When war is declared, the sachems and great women generally give up the management of public affairs into the hands of the warriors. But a sachem may at the same time be also chief warrior.

SIXTUS I., bishop of Rome, according to Dr. Watkins, succeeded Alexander I., A.D. 119, suffered martyrdom for Christianity, A.D. 127, and was afterwards canonised as a saint. But Alstedius and Marcel place his accession in 131-2, and his martyrdom in 142.

SIXTUS II., a native of Athens, succeeded Stephen I. as bishop of Rome, A.D. 257. He suffered martyrdom during the persecution under Valerian, three days before his disciple St. Lawrence, A.D. 258.

SIXTUS III. was a priest in the Roman church, and was elected pope in 432. He was an author, and his Epistles are extant. He suppressed the heresies of Pelagius and Nestorius in the west; and died in 440.

SIXTUS IV. was the son of a fisherman, born in 1412, and, entering among the Cordeliers, became very learned. He was eminent as a professor of theology, in several universities in Italy, and was raised to the cardinalship by Paul II., whom he succeeded in 1471. He attempted to stir up a new crusade, but without success; but obtained some signal advantages over the Turks by his own galleys. He wrote several Treatises on Theology; but gave offence even to Catholics, by publishing a bull ordaining an annual festival in honor of the immaculate conception. He died in 1484, aged seventy-two.

SIXTUS V., pope, was born the 13th of De-

cember, 1521, in La Marca, a village in the seigniory of Montalto. His father, Francis Petretti, was a gardener, and his mother a servant maid. He was their eldest child, and was called Felix. At the age of nine he was hired out to an inhabitant of the village to keep sheep; but, disobliging his master, he was degraded to be keeper of the hogs. He was engaged in this employment when F. Michael Angelo Selleri, a Franciscan friar, asked the road to Ascoli, where he was going to preach. Young Felix conducted him thither, and struck the father so much with his eagerness for knowledge, that he recommended him to the fraternity to which he had come. Accordingly he was invested with the habit of a lay brother, and placed under the sacristan, to assist in sweeping the church, lighting the candles, and the like; for which he was to be taught the responses and the rudiments of grammar. His progress in learning was so surprising that at the age of fourteen he was qualified to begin his novitiate, and was admitted at fifteen to make his profession. He pursued his studies with unweary assiduity; and was ordained priest in 1545, when he assumed the name of father Mountalto; soon after he took his doctor's degree, and was appointed professor of theology at Sienna, where he so effectually recommended himself to cardinal di Carpi, and his secretary Bossius, that they ever remained his steady friends. Meanwhile the severity and obstinacy of his temper incessantly engaged him in disputes with his monastic brethren. His reputation for eloquence, which was now spread over Italy, about this time gained him some new friends. Among these were the Colonna family, and F. Ghisilieri, by whose recommendation he was appointed inquisitor-general at Venice; but he exercised that office with so much severity that he was obliged to flee precipitately from that city. Upon this he went to Rome, where he was made procurator-general of his order, and soon after accompanied cardinal Buon Compagnon into Spain, as a chaplain and consultor to the inquisition; where he was treated with great respect. Pius IV. dying, father Ghisilieri, or cardinal Alexandrino, succeeded him under the name of Pius V.; and Montalto was immediately invested by the pontiff with new dignities. He was made general of his order, bishop of St. Agatha, raised to the dignity of cardinal, and received a pension. About this time he was employed by the pope to draw up the bill of excommunication against queen Elizabeth. He began now to look towards the papacy; and, to obtain it, formed and executed a plan of hypocrisy with unparalleled constancy and success. He became humble, patient, and affable. He changed his dress, his air, his words, and his actions, so completely, that his most intimate friends declared him a new man. Never was there such an absolute victory gained over the passions; never was a fictitious character so well maintained, nor the foibles of human nature so artfully concealed. He had formerly treated his relations with the greatest tenderness, but he now changed his behaviour to them entirely. When Pius V. died in 1572, he entered the conclave with the other cardinals, but seemed

altogether indifferent about the election, and never left his apartment except to his devotion. When cardinal Buon Compagnon, or Gregory XIII., was elected, Montalto flattered him, but the new pope treated him with the greatest contempt, and deprived him of his pension. He now assumed all the infirmities of old age; his head hung down upon his shoulders; he tottered as he walked, and supported himself on a staff. His voice became feeble, and was often interrupted by a cough so exceedingly severe that it seemed every moment to threaten his dissolution. He interfered in no public transactions, but spent his whole time in acts of devotion and benevolence. Mean time he constantly employed the ablest spies, who brought him intelligence of every particular. When Gregory XIII. died, in 1585, he entered the conclave with reluctance, and appeared perfectly indifferent about the event of the election. He joined no party, yet flattered all. He knew that there would be divisions in the conclave, and that when the leaders of the different parties were disappointed in their own views, they often agreed in the election of some old and infirm cardinal, the brevity of whose life would soon occasion a new vacancy. Three cardinals, the leaders of opposite factions, being unable to procure the election which each of them wished, unanimously agreed to make choice of Montalto. When they came to acquaint him with their intention, he fell into a violent fit of coughing, and told them that his reign would last but a few days. He conjured them to take the whole weight of affairs upon their own shoulders. The cardinals swallowed the bait, and Montalto was elected. He now pulled off the mask which he had worn for fourteen years. No sooner was his election secured, than he started from his seat, and appeared almost a foot taller than he had done for several years. His former complaisance and humility disappeared, together with his infirmities, and he now treated all around him with reserve and haughtiness. The first care of Sixtus V. was to correct the abuses, and put a stop to the enormities, daily committed in the ecclesiastical state. The lenity of Gregory's government had introduced a general licentiousness of manners. It had been usual with former popes to release delinquents on the day of their coronation, who therefore surrendered themselves voluntarily prisoners after the election of the pope. When the governor of Rome and the keeper of St. Angelo waited on his holiness, to know his intention in this particular, he replied, 'We have too long seen the prodigious degree of wickedness that exists in the state to think of granting pardons. Let the prisoners be brought to a speedy trial, and punished as they deserve, to show the world that Divine Providence has called us to the chair of St. Peter, to reward the good and chastise the wicked; that we bear not the sword in vain, but are the minister of God, and a revenger to execute wrath on them that do evil.' Accordingly he appointed commissioners to inspect the conduct of the judges, displaced those who were inclined to lenity, and put others of severe dispositions in their room. He offered rewards to any person who could convict them of corruption

or partiality. He ordered the syndics of all the towns and signories to make out a complete list of the disorderly persons within their districts. The syndic of Albano was scourged in the market-place because he had left his nephew, an incorrigible libertine, out of his list. He made laws equally severe and just against robbers and assassins. Adulterers, when discovered, suffered death; and they who willingly submitted to the prostitution of their wives, a custom then common in Rome, received the same punishment. He was particularly careful of the purity of the female sex; and his execution of justice was as prompt as his edicts were rigorous. A Swiss, happening to give a Spanish gentleman a blow with his halberd, was struck by him so rudely with a pilgrim's staff that he expired on the spot. Sixtus informed the governor of Rome that he was to dine early, and that justice must be executed on the criminal before he sat down to table. The Spanish ambassador and four cardinals entreated him not to disgrace the gentleman by suffering him to die on a gibbet, but to order him to be beheaded. 'He shall be hanged (replied Sixtus), but I will alleviate his disgrace by doing him the honour to assist personally at his death.' He ordered a gibbet to be erected before his own windows, where he continued sitting during the whole execution. When Sixtus ascended the throne, the whole ecclesiastical state was infested with bands of robbers, who from their numbers and outrages were exceedingly formidable; but by his vigorous conduct he soon extirpated the whole of these banditti. Nor was the vigor of his conduct less conspicuous in his transactions with foreign nations. Before he had been pope two months, he quarrelled with Philip II. of Spain, Henry III. of France, and Henry king of Navarre. His intrigues, indeed, in some measure influenced all the councils of Europe. After his accession to the pontificate, he sent for his family to Rome, with orders that they should appear in a decent and modest manner. Accordingly his sister Camilla came thither, accompanied by her daughter and two grand-children. Some cardinals, to pay court to the pope, went out to meet her, and introduced her in a very magnificent dress. Sixtus pretended not to know her, and asked two or three times who she was. Her conductors at last found it necessary to carry her to an inn, and strip her of her finery. When Camilla was again introduced, Sixtus embraced her tenderly, and said, 'Now we know indeed that it is our sister; nobody shall make a princess of you but ourselves.' He stipulated with his sister that she should neither ask any favour in matters of government, nor intercede for criminals, nor interfere in the administration of justice; declaring that such requests would meet with a certain refusal. These terms being agreed to, and punctually observed, he made the most ample provision not only for Camilla but for his whole relations. This great man was also an encourager of learning. He caused an Italian translation of the Bible to be published, which raised a good deal of discontent among the Catholics. When some cardinals reproached him for his conduct in this respect, he replied, 'It was

published for the benefit of you cardinals who cannot read Latin.' He died 27th of August, 1590, after a reign of little more than five years. To the indulgence of a disposition naturally severe, all the defects of this wonderful man are to be ascribed. Clemency was a stranger to his bosom; his punishments were often too cruel, and seemed sometimes to border on revenge. But, though the conduct of Sixtus seldom excites love, it generally commands our esteem and sometimes our admiration. He strenuously defended the cause of the poor, the widow, and the orphan; he never refused audience to the injured, however wretched or forlorn. He never forgave those magistrates who were convicted of partiality or corruption; nor suffered crimes to pass unpunished, whether committed by the rich or the poor. He was frugal, temperate, sober, and never neglected to reward the smallest favor which had been conferred on him before his exaltation. When he mounted the throne, the treasury was not only exhausted, but in debt; at his death it contained 5,000,000 of gold. Rome was indebted to him for several of her greatest embellishments, particularly the Vatican library; it was by him, too, that trade was first introduced into the ecclesiastical state; and he allotted 3000 crowns a year for the redemption of Christian slaves from the Turks.

SIYA-GUSSU, the caracal of Buffon, a species of Lynx.

SIZAR, or SIZER, in Latin sizator, an appellation by which the lowest order of students in the universities of Cambridge and Dublin are distinguished, is derived from the word *To size*, which in Cambridge, in the language of the university, signifies to get any sort of victuals from the kitchens which the students may want in their own rooms, or in addition to their commons in the hall, and for which they pay the cooks or butchers at the end of each quarter. A size of any thing is the smallest quantity of the thing which can be thus bought: two sizes or a part of beef being nearly equal to what a young person will eat of that dish to his dinner; and a size of ale or beer being equal to half an English pint. The sizars are divided into two classes; viz. subsizatores, or sizars, and sizatores, or proper sizars. The former are supplied with commons from the table of the fellows and fellow-commoners; and in former times, when these were more scanty than they are now, they were obliged to supply the deficiency by sizing, as is sometimes the case still. The proper sizars had formerly no commons at all. In St. John's college they have now some commons allowed them for dinner, from a benefaction; but they are still obliged to size their suppers. In the other colleges they are allowed a part of the fellows' commons, but must size the rest; and, from being thus obliged to size the whole or part of their victuals, the whole order derived the name of sizars. In Oxford, the order similar to that of sizar is denominated servitor, a name evidently derived from the menial duties which they perform. In both universities these orders were formerly distinguished by round caps and gowns of different materials from those of the pensioners or commoners, the order immediately above them,

But about forty years ago the round cap was entirely abolished in both seminaries. There is still, however, in Oxford, we believe, a distinction in the gowns, and there is also a trifling difference in some of the small colleges in Cambridge; but in the large colleges the dress of the pensioners and sizars is entirely the same. In Oxford the servitors are still obliged to wait at table on the fellows and gentlemen commoners, but, much to the credit of the university of Cambridge, this most degrading custom was entirely abolished about forty years ago, and of course the sizars of Cambridge are now on a much more respectable footing than the servitors of Oxford. The sizars are not upon the foundation and therefore while they continue sizars are not capable of being elected fellows; but they may at any time if they choose become pensioners: and they generally sit for scholarships immediately before they take their first degree. If successful, they are then on the foundation, and are entitled to become candidates for fellowships when they have got that degree. In the mean time, while they continue sizars, besides the free-commoners they enjoy many benefactions, which have been made at different times, under the name of sizars, prætor, exhibitions, &c., and the rate of tuition, the rent of rooms, and other things of that sort within their respective colleges, is less than to the other orders. But, though their education is thus obtained at a less expense, they are not now considered as a menial order: for sizars, pensioner-scholars, and even sometimes fellow-commoners, mix together with the utmost cordiality. It is worthy of remark that at every period this order has supplied the university with its most distinguished officers; and that many of the most illustrious members of the church, many of the most distinguished men in the other liberal professions, have, when undergraduates, been sizars, when that order was on a less respectable footing than it is now.

SIZATORES. See the last article.

SIZE, n.s. & v. a. Perhaps, says Johnson, SIZLD, adj. rather else, from Lat. *in-*

SIZZABLE. *sisa*, or from Fr. *assez*.

Bulk; quantity; comparative magnitude; settled quantity; condition; to adjust according to size; fix; settle: sized is having a particular magnitude: sizeable, reasonably bulky.

I ever verified my friends,

With all ~~the~~ <sup>the</sup> that verity

Would without lapsing suffer.

Shakspeare. *Coriolanus*.

'Tis not in thee  
To cut off my train, to scant my sizes,  
And, in conclusion, to oppose the bolt  
Against my coming in. *Id. King Lear.*

What my love is, proof hath made you know,  
And as my love is sized, my fear is so. *Shakspeare.*

If any decayed ship be new made, it is more fit to make her a size less than bigger. *Raleigh.*

There was a statute for dispersing the standard of the exchequer throughout England; thereby to weights and measures. *B. v's Henry VII.*

The foxes weigh the geese t<sup>e</sup> ey carry,  
And, ere they venture on a stream,  
Know how to size themselves and them. *Hawib*

The distance judged for shot of every sic.  
The linstocks touch, the ponderous ball es

Two troops so matched were never to be found,  
Such bodies built for strength, of equal age,  
In stature sized. *Id. Knight's Tale.*

Objects near our view are thought greater than  
those of a larger size, that are more remote. *Locke.*

That will be a great horse, to a Welshman which  
is but a small one to a Fleming; having, from the  
different breed of their countries, taken several sized  
ideas, to which they compare their great and their  
little. *Locke.*

He should be purged, sweated, vomited, and  
starved, till he come to a sizeable bulk. *Arbuthnot.*

The martial goddess,  
Like thee, Telemachus, in voice and size,  
With speed divine, from street to street she flies. *Pope.*

They do not consider the difference between elab-  
orate discourses, delivered to princes or parliaments,  
and a plain sermon, for the middling or lower size of  
people. *Swift.*

**SIZE, n.s.** Ital. *sisa.* Any viscous or  
**St'ZINESS, n.s.** glutinous substance: glutin-  
**St'ZY, adj.** nousness: viscous; glutino-

nous. In rheumatisms, the siziness passes off thick con-  
tests in the urine, or glutinous sweats. *Fayrer on the Humours.*

Cold is capable of producing a siziness and visco-  
sity in the blood. *Arbuthnot.*

The blood is sicc, the alkalescent salts in the  
serum producing coraceous concretions. *Id. On Diet.*

**SIZE** is also a sort of paint, varnish, or blue,  
used by painters, &c. The shreds and parings  
of leather, parchment, or vellum, being boiled  
in water and strained, make size. This man-  
ner of using size is to melt some of it over a  
gentle fire; and, scraping as much whiting into  
it as will just color it, let them be well incorpo-  
rated together; after which you may whiten  
frames, &c., with it. After it dries, melt the size  
again, and put more whiting, and whiten the  
frames, &c., seven or eight times, letting it dry  
between each time; but before it is quite dry,  
between each washing with size, you must  
smooth and wet it over with a clean brush  
pencil in fair water.

**SIZE, GOLD.** To make gold size, take gum  
animi and asphaltum, of each one ounce; mi-  
nium, litharge of gold, and amber, of each half  
an ounce: reduce all into a very fine powder,  
and add to them four ounces of linseed oil, and  
eight ounces of drying oil: digest them over a  
gentle fire that does not flame, so that the mix-  
ture may only simmer, but not boil, lest it should  
run over and set the house on fire; stir it con-  
stantly with a stick till all the ingredients are  
dissolved and incorporated, and do not leave off  
stirring till it becomes thick and ropy; after  
being sufficiently boiled, let it stand till it is  
almost cold, and then strain it through a coarse  
linen cloth, and keep it for use. To prepare it  
for working, put what quantity you please in a  
horse-mussel shell, adding as much oil of tur-  
pentine as will dissolve it; and making it as  
thin as the bottom of your seedlac varnish, hold  
it over a candle, and then strain it through a  
linen-rag into another shell; add to these as  
much vermillion as will make it of a darkish red:  
if it is too thick for drawing, you may thin it

with some oil of turpentine. The chief use of  
this size is for laying on metals.

**SIZE, SILVER.** To make silver size, take to-  
bacco pipe clay in fine powder, into which scrape  
some black lead and a little Genoa soap, and mix  
them all together with parchment size as already  
directed.

**SIZE,** the name of an instrument used for  
finding the bigness of fine round pearls. It  
consists of thin pieces or leaves, about two inches  
long, and half an inch broad, fastened together  
at one end by a rivet. In each of these are round  
holes drilled of different diameters. Those in  
the first leaf serve for measuring pearls from half  
a grain to seven grains; those of the second for  
pearls from eight grains, or two carats, to five  
carats, &c.; and those of the third for pearls  
from six carats and a half to eight and a half.

**SIZER, or SER'VITOR, n.s.** From the noun  
substantive above. A certain rank of students  
in the universities.

They make a scramble for degree:

Masters of all sorts and of all ages,  
Keepers, sub-sizers, lackeys, pages. *Bp. Corbett.*

**SKAGGIE**, a small river of Scotland, in Perth-  
shire, which rises in the parish of Monzie, and  
falls into the Erne near Crieff.

**SKAINS'MATE, n.s.** (I suppose from skain,  
or skean a knife, and mate). A messmate. It  
is remarkable that Dutch *mcs* is a knife.—Dr.  
Johnson.

Scurvy knave, I am none of his flit gills;  
I am none of his skainsmate. *Shakspeare, Romeo and Juliet.*

**SKATE, n.s.** Sax. *feceðda.* A flat sea-fish;  
a flat kind of shoe armed with iron, for sliding  
on the ice.

They sweep

On sounding *skates* a thousand different ways,  
In circling poise swift as the winds. *Thomson.*

**SKATING**, an exercise on ice, both graceful  
and healthy. Although the ancients were re-  
markable for their dexterity in most of the ath-  
letic sports, yet skating seems to have been un-  
known to them. It may therefore be considered  
as a modern invention; and probably it derived  
its origin in Holland, where it was practised,  
not only as a graceful and elegant amusement,  
but as an expeditious mode of travelling when  
the lakes and canals were frozen up during win-  
ter. In Holland long journeys are made upon  
skates with ease and expedition; but in general  
less attention is there paid to graceful and ele-  
gant movements than to the expedition and cele-  
rity of what is called journey skating. It is  
only in those countries where it is considered as  
an amusement that its graceful attitudes and  
movements can be studied; and there is no ex-  
ercise whatever better calculated to set off the  
human figure to advantage. The acquirement  
of most exercises may be attained at an advanced  
period of life; but, to become an expert skater,  
it is necessary to begin the practice of the art  
at a very early age. It is difficult to reduce the  
art of skating to a system. It is principally by  
the imitation of a good skater that a young prac-  
titioner can form his own practice. The Eng-  
lish, though often remarkable for feats of agility  
upon skates, are very deficient in gracefulness.

which is partly owing to the construction of the skates. They are too much curved in the surface which embraces the ice, consequently they involuntarily bring the users of them round on the outside upon a quick and small circle; whereas the skater, by using skates of a different construction, less curved, has the command of his stroke, and can enlarge or diminish the circle according to his own wish. ‘ Edinburgh,’ says a Scottish writer, ‘ has produced more instances of elegant skaters than perhaps any other city or country; and the institution of a Skating Club, about fifty years ago, has contributed much to the improvement of this elegant amusement.’ A gentleman of that club, who has made the practice and improvement of skating his particular study, gives the following instructions to beginners:—‘ Those who wish to be proficients should begin at an early period of life, and endeavour to throw off the fear which always attends the commencement of an apparently hazardous amusement. They will soon acquire a facility of moving on the inside: when they have done this, they must endeavour to acquire the movement on the outside of the skates; which is nothing more than throwing themselves upon the outer edge of the skate, and making the balance of their body tend towards that side, which will necessarily enable them to form a semicircle. In this, much assistance may be derived from placing a bag of lead shot in the pocket next to the foot employed in making the outside stroke, which will produce an artificial poise of the body, which afterwards will become natural by practice. At the commencement of the outside stroke, the knee of the employed limb should be a little bended, and gradually brought to a rectilinear position when the stroke is completed. When the practitioner becomes expert in forming the semicircle with both feet, he is then to join them together, and proceed progressively and alternately with both feet, which will carry him forward with a graceful movement. Care should be taken to use very little muscular exertion, for the impelling motion should proceed from the mechanical impulse of the body thrown into such a position as to regulate the stroke. At taking the outside stroke, the body ought to be thrown forward easily, the unemployed limb kept in a direct line with the body, and the face and the eyes directly looking forward: the unemployed foot ought to be stretched towards the ice, with the toes in a direct line with the leg. In the time of making the curve, the body must be gradually and almost imperceptibly raised, and the unemployed limb brought in the same manner forward; so that, at finishing the curve, the body will bend a small degree backward, and the unemployed foot will be about two inches before the other, ready to embrace the ice and form a correspondent curve. The muscular movement of the whole body must correspond with the movement of the skate, and should be regulated so as to be almost imperceptible to the spectators. Particular attention should be paid in carrying round the head and eyes with a regular and imperceptible motion; for nothing so much diminishes the grace and elegance of skating as sudden jerks and exertions, which are too

frequently used by the generality of skaters. The management of the arms likewise deserves attention. There is no mode of disposing of them more gracefully in skating outside, than folding the hands into each other, or using a muff. There are various feats of activity and manœuvres used upon skates; but they are so various that we cannot detail them. Moving on the outside is the primary object for a skater to attain; and, when he becomes an adept in that, he will easily acquire a facility in executing other branches of the art. There are few exercises but will afford him hints of elegant and graceful attitudes. For example, nothing can be more beautiful than the attitude of drawing the bow and arrow whilst the skater is making a large circle on the outside: the manual exercise and military salutes have likewise a pretty effect when used by an expert skater.’

SKEAN, *n. s.* Sax. *ragene*; Irish and Erse *scian*; Arab. *siccan*. A short sword; a knife.

Any disposed to do mischief may under his mantle privily carry his head piece, *skean*, or pistol, to be always ready. *Spenser.*

The Irish did not fail in courage or fierceness, but, being only armed with darts and *skaines*, it was rather an execution than a fight upon them.

*Bacon's Henry VII.*

SKEG, *n. s.* } Goth. *skog*, is a wood. A  
SKEGGER. } wild wood plum; a small,  
short kind of salmon. See below.

Little salmonns, called *skeggers*, are bred of such sick salmon that might not go to the sea; and, though they abound, yet never thrive to any bigness.

*Walton's Angler.*

SKEIN, *n. s.* Fr. *escaigne*; Germ. *schien*. A knot or hank of thread.

Why art thou then exasperate, thou idle immaterial *skein* of sleyed silk, thou tassel of a prodigal's purse? *Shakspeare.*

Our stile should be like a *skein* of silk, to be found by the right thread, not ravelled or perplexed. Then all is a knot, a heap. *Ben Jonson.*

Besides, so lazy a brain as mine is, grows soon weary when it has so entangled a *skein* as this to unwind. *Dibdy.*

SKEL'ETON, *n. s.* Lat. *skeleton*; Gr. σκελετος. The bones of an animal body; such bones preserved together as much as can be in their natural situation; a collection of the principal parts of any thing.

The great structure itself, and its great integrals, the heavenly and elementary bodies, are framed in such a position and situation, the great *skeleton* of the world. *Hale.*

When rattling bones together fly,  
From the four corners of the sky;  
When sinews o'er the *skeletons* are spread,  
Those cloath'd with flesh, and life inspires the dead. *Druden.*

Though the patient may from other causes be exceedingly emaciated, and appear as a ghastly *skeleton*, covered only with a dry skin, yet nothing but the ruin and destruction of the lungs denominates a consumption. *Blackmore.*

The schemes of any of the arts or sciences may be analyzed in a sort of *skeleton*, and represented upon tables, with the various dependencies of their several parts. *Watts.*

I thought to meet, as late as heaven might grant,  
A *skeleton*, ferocious, tall, and gaunt,

Whose loose teeth in their naked sockets shook,  
And grinned terrific a Sardonian look. *Harte.*

**SKELETON**, in anatomy, the dried bones of any animal joined together by wires, or by the natural ligament dried, so as to show their position when the creature was alive. See ANATOMY. There is in the Philosophical Transactions an account of a human skeleton, all the bones of which were so united as to make but one articulation from the back to the os sacrum and downwards a little way. On sawing some of them, where they were unnaturally joined, they were found not to cohere throughout their whole substance, but only about a sixth of an inch deep all round. The figure of the trunk was crooked, the spine making the convex, and the inside of the vertebrae the concave part of the segment. The whole had been found in a charnel-house, and was of the size of a full grown person.

**SKELTON** (John), an English poet of the fifteenth century, usually styled poet laureat, having been laureatus, or invested with the laurel, at Oxford, a poetical degree then conferred. He entered into orders, and was made rector of Diss, in Norfolk; but, as Wood says, he was fitter for the stage than the pulpit; for he was suspended by his bishop for some loose compositions. After this he satirised cardinal Wolsey, who persecuted him with such violence that he took refuge in Westminster Abbey. He died in 1529. He left many works. The chief are his *Poemata et Satire*.

**SKEP**, *n. s.* Lower Sax. *jeephen*, to draw. A sort of corn basket, narrow at the bottom, and wide at the top.

A pitchforke, a doongforke, seeve, skep, and a bin.  
*Tusser.*

**SKEPTICK**, *n. s.* Fr. *sceptique*; Greek *σκεπτικός*. One who

**SKEPTICAL**, *adj.* *σκεπτικός*. Doubts, or pretends to doubt, of every thing; generally written **SCEPTIC**. The adjective and noun substantive following correspond.

Bring the cause unto the bar; whose authority none must disclaim, and least of all those *scepticks* in religion. *Decay of Pity.*

I laid by my natural diffidence and scepticism for a while, to take up that dogmatic way. *Dryden.*

*Survey.*

Nature's extended face, then, *scepticks* say,  
In this wide field of wonders can you find  
No art? *Blackmore.*

With too much knowledge for the *sceptick's* side,  
With too much weakness for the stoick's pride,  
Man hangs between. *Pope's Essay on Man.*

May the Father of mercies confirm the *sceptical* and wavering minds, and so prevent us, that stand fast, in all our doings, and further us with his continual help. *Bentley.*

The dogmatist is sure of every thing, and the *sceptick* believes nothing. *Watts's Logick.*

**SKERRIES**, a name applied to certain low rocky islands, among the northern and western isles of Scotland and Ireland. as, 1. Three small islands of Ireland, on the coast of the county of Dublin, Leinster; remarkable for producing great quantities of sea-ware, from which kelp is manufactured. On one of these islands there is a light house, which is seen at twenty-four

miles distance. Large flocks of puffins visit it. They arrive in one night and depart all together in another. 2. A village of Ireland, on the coast of Dublin, so named from the above islands, seventeen miles from Dublin. 3. Three islands of Scotland, among the Shetland islands, twenty-five miles north-east of Whalsay, and twenty from Mainland. In 1792 they contained eleven families, consisting of seventy inhabitants.

**SKETCH**, *n. s. & v. n.* Lat. *schedulea*, or Belg. *schets*, of Goth. *skyta*, to throw out. An outline; rough draught; first plan: to draw in outline; to plan.

The reader I'll leave in the midst of silence, to contemplate those ideas which I have only *sketched* and which every man must finish for himself.

*Dryden's Dufresnoy.*

I shall not attempt a character of his present majesty, having already given an imperfect sketch of it. *Addison.*

As the lightest *sketch*, if justly traced, Is by ill colouring but the more disgraced, So by false learning is good sense defaced. *Pope:*

If a picture is daubed with many glaring colours, the vulgar eye admires it; whereas he judges very contemptuously of some admirable design, *sketch'd* out only with a black pencil, though by the hand of Raphael. *Watts's Logick.*

**SKEWER**, *n. s. & v. a.* Dan. *skere*; Goth. and Swed. *skef*. A wooden or iron pin, used to keep meat in form: to fasten with skewers.

Sweetbreads and collops were with *skewers* prick'd About the sides. *Dryden's Iliad.*

I once may overlook A *skewer* sent to table by my cook. *King*

From his rug the *skewer* he takes, And on the stick ten equal notches makes. *Swift.*

Send up meat well stuck with *skewers*, to make it look round; and an iron *skewer*, when rightly emplaced, will make it look handsomer. *Id. Directions to the Cook.*

**SKIDDAW**, a mountain of Cumberland, England, and one of the greatest eminences of the island. It is distinguished for its romantic and grand scenery, as well as for the lakes in its hollows, and near its base.

According to colonel Mudge's trigonometrical survey, the highest point of Skiddaw is 3022 feet above the level of the sea: Sea-fell, in the same county, is 3166 feet in height. Its surface also presents a variety of substances, colors, and forms: in some places are vast masses of bare rock; in other parts a soft short grass presents itself; and in others are heath, furze, and brambles. Wildness and grandeur are the general features. Mrs. Radcliffe gives an interesting description of different parts of this mountain, in her Journey through Holland, &c., 2 vols. 8vo., 1795. See also West's Guide to the Lakes, 8vo., 1802; and Gilpin's Observations on Picturesque Beauty, and on the Mountains and Lakes of Cumberland and Westmoreland, 2 vols. 8vo., 1786.

**SKIFF**, *n. s.* Fr. *esquife*; Span. *esquif*; Lat. *scapha*. A small light boat.

If in two *skiffs* of cork a loadstone and steel be placed within the orb of their activities, the one doth not move, the other standing still; but both steer into each other. *Browne.*

In a poor *skiff* he passed the bloody main,  
Choaked with the slaughtered bodies of his train.

*Dryden.*

On Garraway cliffs

A savage race, by shipwreck fed,  
Lie waiting for the founder'd *skiffs*,

And strip the bodies of the dead.

*Swift.*

**SKILL**, *n. s. & v. n.* Isl. *skill*; Swed. *skel*,  
**SKIL'FUL**, *adj.* { *skiel*, of Goth. *skil*; *ski*-  
**SKIL'FULLY**, *adv.* { *tia*, to discriminate;  
**SKIL'FULNESS**, *n. s.* { distinguish. Knowledge  
**SKILL'ED**, *adj.* { or aptitude in any prac-  
**SKIL'LESS**. { tice or art; dexterity;  
artfulness: used by Hooker for the art itself: to  
skill is, according to its primitive sense, to dis-  
tinguish; make difference; to be knowing in, be  
dexterous at; but this verb is obsolete: skilful  
and skilled mean knowing, dexterous; able;  
taking of, at, and in, before the object; the ad-  
jective and noun substantive correspond: skillless  
is destitute of skill.

His father was a man of Tyre, *skilful* to work in  
gold and silver. *2 Chron. ii. 14.*

The overseers were all that could *skill* of instru-  
ments of musick. *Id. xxxiv. 12.*

He fed them according to the integrity of his heart,  
and guided them by the *skilfulness* of his hands.

*Psalm lxxviii. 72.*

They shall call the husbandman to mourning, and  
such as are *skilful* of lamentation, to wailing.

*Amos v. 16.*

They that *skill* not of so heavenly matter,  
All that they know not, envy or admire. *Spienser.*

As soon as he came near me, in fit distance, with  
much fury, but with fury *skilfully* guided, he ran  
upon me. *Sidney.*

Whether the commandments of God in scripture  
be general or special, it *skilleth* not. *Hooker.*

Learned in one *skill*, and in another kind of learn-  
ing unskilful. *Id.*

One man of wisdom, experience, learning, and  
direction, may judge better in those things that he  
can *skill* of, than ten thousand others that be igno-  
rant. *Whitgiffe.*

*Skill* in the weapon is nothing without *sack*.

*Shakspeare.*

You have  
As little *skill* to fear, as I have purpose  
To put you to't. *Id.*

Nor have I seen  
More that I may call men than you:  
How features are abroad I'm *skilless* of. *Id.*

Thy wit, that ornament to shape and love,  
Mishapen in the conduct of them both,  
Like powder in a *skillless* soldier's flask,  
Is set on fire. *Id. Romeo and Juliet.*

He intending not to make a summer business of  
it, but a resolute war, without term prefixed, until he  
had recovered France, it *skilled* not much when he  
began the war, especially having Calais at his back,  
where he might winter. *Bacon.*

What *skills* it, if a bag of stones or gold  
About thy neck do drown thee; raise thy head,  
Take stars for money; stars not to be told  
By any art, yet to be purchased,  
None is so wasteful as the scraping dame;  
She loseth three for one; her soul, rest, fame. *Herbert.*

Moses in all the Egyptian arts was *skilled*,  
When heavenly power that chosen vessel filled. *Denham.*

Of these nor *skilled* nor studious. *Milton.*

Oft nothing profits more  
Than self-esteem, grounded on just and right,  
Well managed; of that *skill* the more thou know'st,  
The more she will acknowledge thee her head. *Id.*

I will from wond'rous principles ordain  
A race unlike the first, and try my *skill* again. *Dryden.*

He must be very little *skilled* in the world, who  
thinks that a volatile tongue shall accompany only  
a good understanding. *Locke.*

Will Vafer is *skilful* at finding out the ridiculous  
side of a thing, and placing it in a new light. *Tatler.*

Ulysses builds a ship with his own hands, as *skil-*  
*fully* as a shipwright. *Broome.*

Say, Stella, feel you no content,  
Reflecting on a life well spent?  
Your *skilful* hand employed to save  
Despairing wretches from the grave:  
And then supporting with your store  
Those whom you dragged from death before. *Swift.*

Phocion, the Athenian general, then ambassador  
from the state, by his great wisdom and *skill* et ne-  
gotiations, diverted Alexander from the conquest of  
Athens, and restored the Athenians to his favour. *Id.*

Instructors should not only be *skilful* in those  
sciences which they teach: but have *skill* in the me-  
thod of teaching, and patience in the practice. *Watts on the Mind.*

**SKIL'LET**, *n. s.* Fr. *escuellette*; Lat. *scutula*.  
A small kettle or boiler.

When light winged toys  
Of feathered Cupid foil with wanton dullness  
My speculative and officed instruments,  
Let house-wives make a *skillet* of my helm,  
And all indign and base adversities  
Make head against my estimation. *Shakspeare. Othello.*

Break all the wax, and in a kettle or *skillet* set it  
over a soft fire. *Mortimer's Husbandry.*

**SKIM**, *v. a. & v. n.* Properly to scum,  
**SKIM'MER**, *n. s.* { from Fr. *scum*, *escume*.  
**SKIM'MILK**. { —Johnson. But there  
is a Gothic *skyma*, and Icelandic *skima*, meaning  
to glide along. To take the scum clear off from  
the upper part, by passing a vessel a little below  
the surface; take by skimming; glide over the  
surface; cover superficially (improper): as a  
verb neuter, to pass lightly; glide along: a  
skimmer is a vessel used in skimming: skim-  
milk, that from which the cream has been taken.

She boils in kettles must of wine, and *skins*  
With leaves the dregs that overflow the brims. *Dryden.*

His principal studies were after the works of Ti-  
tian, whose cream he had *skimmed*. *Id. Dufresnoy.*  
The swallow *skins* the river's wat'ry face. *Dryden.*

Dangerous flats in secret anabush lay,  
Where the false tides *skin* o'er the covered land,  
And seamen with dissembled depths betray. *Id.*

Wash your wheat in three or four waters, stirring  
it round, and with a *skimmer*, each time, take off the  
light. *Mortimer.*

Then cheese was brought; says Slouch, this e'en  
shall roll;

This is *skimmilk*, and therefore it shall go. *King.*

Thin airy shapes o'er the furrows rise,  
A dreadful scene! and *skin* before his eyes. *Addison.*

The surface of the sea is covered with its bubbles,  
while it rises, which they *skin* off into their boats,  
and afterwards separate in pots. *Id.*

My coz Tom, or his coz Mary,  
Who hold the plough or skim the dairy,  
My fav'rite books and pictures sell.      *Prior.*  
A wing'd eastern blast just skimming o'er  
The ocean's brow, and sinking on the shore.      *Id.*  
Whilome I've seen her skim the clouted cream,  
And press from spongy curds the milky stream.      *Gay.*

When Ajax strives some rock's vast weight to  
throw,  
The line too labours, and the words move slow ;  
Not so when swift Camilla scours the plain,  
Flies o'er the unbending corn, and skims along the  
main.      *Pope.*

Such as have active spirits, who are ever skimming  
over the surface of things with a volatile spirit, will  
fix nothing in their memory.      *Watts on the Mind.*

But Peggy dear, the ev'ning's clear,  
Thick flies the skimming swallow ;  
The sky is blue, the fields in view,  
All fading-green and yellow.      *Burns.*  
Thou polish'd and high finish'd foe to truth,  
Gray beard corrupter of our listening youth,  
To purge and skin away the filth of vice,  
That so refined it might the more entice,  
Then pour it on the morals of thy son ;  
To taint his heart was worthy of thine own !      *Couper.*

**SKIMBLESKAMBLF.** *adj.* A cant word ;  
a reduplication of scramble. Wandering ; wild.  
A couching lion and a ramping cat,  
And such a deal of skimbleskamble stuff,  
As puts me from my faith.      *Shakespeare.*

**SKIM-COULTER**, in rural economy, a coulter invented by Mr. Ducket, for paring off the surface of coarse grass or other lands, and placing it in the bottom of the furrow. It has been used in different districts with great advantage, and is stated in the agricultural report of Hertfordshire to be of excellent effect in clover-lays, and wherever any rubbish is on the land that wants burying, as well as in breaking up old saintfoin lays.

The Skim-Coultier Plough has a skim-coultor of some kind or other attached to it. See PLough.

**SKIM-MILK**, in rural economy, the milk left after the cream has been taken away or skimmed off. This process is performed by means of a thin skimming-dish, after the milk has been set by for some time in shallow vessels, and when it has undergone, in some cases, the operation of scalding. Where the latter practice is followed, though it might be supposed that all the oily unctuous matter of the milk would be brought to the surface, it is found by experience in Devonshire that that is not the case ; but that, on the contrary, the scalded skinned-milk is much richer, and better even for the purpose of sucking calves, as well as capable of making far better cheese than raw skinned-milk. A number of trials have shown that in forming skim-milk, about ten ounces of butter is taken from twelve pints of milk, under the scalding practice. See DAIRY.

**SKIM-MILK CHEESE**, is cheese made from skinned-milk. It is mostly an inferior sort of cheese, though much of it is made in different districts. It is, however, frequently a practice to take away the cream from only a certain portion of the milk that is intended for cheese, as that

of the night meal, &c. In Devonshire, when cheese is to be made, much care is taken that the milk be not heated so far as to produce bubbles under the cream.

**SKIN**, *n.s. & v.u.* { Sax. *fein*; Dan. *skind* ;  
**SKINNED**, *adj.* { Goth. and Swed. *skin*, of  
**SKIN'NY.** { Goth. *skya*, to cover. The  
outward covering of the flesh : to flay ; strip of  
skin ; cover with skin, or superficially : skinned  
and skinny mean, having or abounding in skin ;  
lean ; thin.

It will but skin and film the ulcerous place,  
Whilst rank corruption, mining all within,  
Infects unseen.      *Shakespeare.*

Authority, though it err like others,  
Has yet a kind of medicine in itself,  
That skins the vice o' the top.      *Id. Measure for Measure.*

Her choppy finger laying  
Upon her skinny lips.      *Id. Macbeth.*

On whose top he strowed  
A wilde goat's shaggy skin ; and then bestow'd  
His own couch on it.      *Chapman.*

The body is consumed to nothing, the skin feeling  
rough and dry like leather. *Harvey on Consumption.*

The beavers run to the door to make their escape,  
are there entangled in the nets, seized by the Indians,  
and immediately skinned.      *Ellis's Voyage.*

The priest on skins of offerings takes his ease,  
And mighty visions in his slumber sees.      *Druden's Aeneid.*

The wound was skinned ; but the strength of his  
thigh was not restored.      *Druden.*

We meet with many of these dangerous civilities,  
wherein 'tis hard for a man to save both his skin and  
his credit.      *L'Estrange.*

It only patches up and skins it over, but reaches  
not to the bottom of the sore.      *Locke.*

Lest the asperity of these cartilages of the wind-  
pipe should hurt the gullet, which is tender, and of a  
skinny substance, these annular gristles are not made  
round ; but, where the gullet touches the windpipe,  
there, to fill up the circle, is only a soft membrane,  
which may easily give way.      *Ray on the Creation.*

What I took for solid earth was only heaps of rub-  
bish, skinned over with a covering of vegetables.      *Addison.*

His fingers meet  
In skinny films, and shape his oary feet.      *Id. Ovid.*  
The last stage of healing, or skinning over, is cal-  
led cicatization.      *Sharp's Surgery.*

When the ulcer becomes foul, and discharges a  
nasty ichor, the edges in process of time tuck in, and,  
growing skinned and hard, give it the name of cal-  
lous.      *Id.*

**SKIN**, in anatomy, the general covering of the  
body of any animal. See ANATOMY, Index, and  
MEDICINE.

**SKIN**, in commerce, is particularly used for  
the membrane stripped off the animal, to be  
prepared by the tanner, Skinner, parchment-  
maker, &c., and converted into leather, &c. See  
TANNING.

**SKINK**, *n.s.* { Sax. *feenc*. Drink ; any  
**SKINE'ER.** { thing potable : one that serves  
drink. Obsolete.

I give thee this pennyworth of sugar, clapt even  
now into my hand by an under skinker ; one that  
never spake other English in his life, than eight shil-  
lings and six-pence, and you are welcome, sir.      *Shakespeare. Henry IV.*

Scotch skink, which is a pottage of strong nourish-

ment, is made with the knees and sinews of beef, but long boiled : jelly also of knuckles of veal.

*Bacon's Natural History.*

Hang up all the poor hop-drinkers,  
Cries old Sym, the king of *skinkers.*   *Ben Jonson.*

His mother took the cup the clown had filled :  
The reconciler bowl went round the board,  
Which, emptied, the rude *skinker* still restored.

*Dryden.*

**SKINNER** (Stephen), an English antiquarian, born in 1622. He travelled and studied in several foreign universities during the civil wars ; and in 1654 returned and settled at Lincoln, where he practised physic with success until 1667, when he died of a malignant fever. His works were collected in folio in 1671, by Mr. Henshaw, under the title of *Etymologicon Lingua Anglicanae*, &c.

**SKINNER** (Rev. John), the son of a country schoolmaster in Aberdeenshire, of the same name, born the 3d of October, 1721, was educated at Marischal College, Aberdeen, and intended by his father (a man of very considerable talents, and of great respectability) for the ministry of the established church. Mr. Skinner displayed in very early life uncommon talents, and his father was flattering himself that he would rise to distinction in his native church ; when he chose to attach himself to the episcopal communion, was ordained in the year 1742, and in November that year became minister of the episcopal congregation in Longside, near Peterhead, of which he continued pastor for sixty-five years. The bishops and clergy of the Scottish Episcopal communion were, for the greater part of that time, noujurors, and subjected, by the penal laws of 1746 and 1748, to very great inconveniences. To these Mr. Skinner was equally subjected with his brethren, though there is no reason to suppose that, by becoming an episcopalian, he became a Jacobite; indeed, the contrary is well known; yet he bore his afflictions with great equanimity, and discharged the duty of his office with great courage and assiduity ; for which, in the year 1753, he suffered six months imprisonment. Mr. Skinner's talents as a man of genius, and acquirements as a man of learning, considering his narrow circumstances, confined society, and numerous disadvantages, were very remarkable. He published at various times, anonymously, several controversial tracts, adapted to the circumstances of his adopted church ; and, in the year 1757, A Dissertation on Jacob's Prophecy, humbly offered as a Supplement to the bishop (Sherlock) of London's admirable Dissertation on the same Text ; which was highly approved by the learned bishop, and by other eminent biblical critics. In the year 1788 he published an Ecclesiastical History of Scotland, in 2 vols. 8vo., in a series of letters, which has obtained the approbation of very eminent men. His leisure hours and retired life Mr. Skinner amused by poetical composition. He possessed more than ordinary proficience in the composition of Latin verse ; and some of his Scotch songs and ludicrous compositions, both Latin and Scotch, have attained the highest celebrity. This talent he exercised as a mere pastime. After his pieces had amused his little

circle, he was so careless of them, that many, of which the effect is yet recollect, have been totally lost. His chief occupation, during his long life, was biblical criticism ; he was a good Hebrew scholar, and an ardent supporter of the Hutchinsonian system of interpretation. He died on the 16th of June, 1807, aged eighty-six, in the house of the bishop his son, near Aberdeen : and his posthumous works were published, with a memoir of his life, in 3 vols. 8vo., in 1809. They consist of 1. Letters addressed to Candidates for Holy Orders in the Episcopal Church of Scotland ; 2. A Dissertation on the Shechinah, or Divine Presence with the Church or People of God ; 3. An Essay towards a literal or true radical Exposition of the Song of Songs, which is Solomon's ; and, 4. Of Specimens of his Latin, English, and Scotch Poetry, serious and ludicrous. The opinions of Mr. Skinner will be variously estimated by various men : they were so in his own time, and among the members of his own communion. But all men will acknowledge that he was an ornament to that communion, and that his talents, his acquirements, and his virtues, might, in different circumstances, have raised him to the highest distinction. He was the object of great and just veneration among the people of his own charge, by far the greater part of whom he had baptised in infancy. It is remarkable, that, for upwards of fifty years, he preached extempore ; employing little more than an hour, previous to the time of public worship, to select his subject, and arrange his matter and mode of treating it.

**SKIP**, *v. n.*, *v. a.*, & *Ital. squittire*; *Fr. SKIPACK*, *n.s.* [*n.s.*] *esquierer*. I know not

**SKIPPER**, *n.s.* whether it may not come from *skip* as a diminutive from

**SKIPPER**.—Johnson. *Swed. skenpa.*—Thomson. To fetch quick bounds ; pass by quick leaps ; bound lightly or joyfully : as a verb active, to miss ; pass : a skip is a light bound or leap : a skipjack, an upstart : a skipper (*Belg. schipper*), the master or assistant of a skip or skiff : skipper, a small boat.

Was not Israel a derision unto thee ? Was he found among thieves ? For, since thou spakest of me, thou skippest for joy.   *Jer. xlvi. 27.*

He looked very curiously upon himself, sometimes fetching a little *skip*, as if he had said his strength had not yet forsaken him.   *Sidney.*

Upon the bank they sitting did espy  
A dainty damsels, dressing of her hair,  
By whom a little *skippet* floating did appear.  
*Faerie Queene.*

Let not thy sword *skip* one :  
Pity not honoured age for his white beard ;  
He is an usurper.   *Shakspeare. Timon of Athens.*

Pope Pius II. was wont to say that the former popes did wisely to set the lawyers a-work to debate, whether the donation of Constantine the Great to Sylvester of St. Peter's patrimony were good or valid in law or no : the better to *skip over* the matter in fact, whether there was ever any such thing at all or no.

*Bacon's Apophthegms.*

The queen, bound with love's powerfulest charm,  
Sat with Pigwiggem arm in arm :  
Her merry maids, that thought no harm,  
About the room were *skipping*.   *Drayton.*

At spur or switch no more he *skippt*,  
Or merr'd pace, than Spaniard whipt.   *Hudibras.*

You will make so large a *skip* as to cast yourself from the land into the water.

*More's Antidote against Atheism.*

Although to engage very far in such a metaphysical speculation were unfit, when I only endeavour to explicate fluidity, yet we dare not quite skip it over, lest we be accused of overseeing it. *Boyle.*

The want of shame or brains does not presently entitle every little *skip-jack* to the board's end in the cabinet. *L'Estrange.*

Are not you afraid of being drowned too? No, not I, says the *skipper*. *Id.*

They who have a mind to see the issue, may skip these two chapters, and proceed to the following. *Burnet.*

The earth-born race  
O'er ev'ry hill and verdant pasture stray,  
*Skip* o'er the lawns, and by the rivers play. *Blackmore.*

No doubt you will return very much improved.—Yes, refined like a Dutch *skipper* from a whale fishing. *Congreve.*

John *skipped* from room to room, ran up stairs and down stairs, peeping into every cranny. *Arbuthnot's History of John Bull.*

The lamb thy riot dooms to bleed to day;  
Had he thy reason, would he *skip* and play? *Pope.*

A gentleman made it a rule, in reading, to *skip* over all sentences where he spied a note of admiration at the end. *Swift.*

**SKIPTON**, a market-town of the West-Riding of Yorkshire, commonly called Skipton-in-Craven, from its situation in the midst of the mountainous district of Cravèn, on the banks of the river Aire, fifteen miles N. N. W. from Otley, ten from Keighley, and 216 north by west of London. The town is composed chiefly of one wide long street, built of stone, at the extremity of which is the church, a spacious structure, rebuilt in 1655. In 1823 an act was passed for the better supplying this place with water. Here the quarter sessions for the West Riding of York are held, in a new town-house. It had an ancient castle, situate upon a high rock, now the mansion of the earl of Thanet, and has a free chapel; but little of the old building remains. Skipton has a good grammar-school. The trade of this place has much increased of late years, from the advantage of having the Leeds and Liverpool canal running near it. It has a considerable trade in grain, a paper mill, a glazing mill, a mill for silk twist, and a cotton manufacture. Market on Saturday.

**SKIRMISH**, *n. s. & v. n.* Fr. *escarmouche*. From Welsh *ys* and *carm*, the shout of war: whence *ysgarm*, and *ysgarmes*, old British words. Maes a naw 'sgarmes a wnan, says an ancient writer.—Johnson. All the northern tongues have a similar word. A slight fight; less than a set battle: to fight loosely or irregularly.

He sat down to perform service, not by the hazard of one set battle, but by dallying off the time with often skirmishes. *Knolles.*

There is a kind of merry war betwixt signor Benedick and her: they never meet but there's a skirmish of wit. *Shakspeare.*

Ready to charge, and to retire at will; Though broken, scattered, fled, they skirmish still. *Fairfax.*

These skirmishes expire not with the first propugners of the opinions: they perhaps began as single duelers; but then they soon have their partisans and

abettors, who not only enhance, but entail the feud to posterity. *Decay of Piety.*

One battle, yes, a skirmish more there was With adverse fortune fought by Cartismand; Her subjects most revolt. *Philip's Britain.*

I'll pass by the little skirmishings on either side. *Atterbury.*

A gentleman volunteer, skirmishing with the enemy before Worcester, was run through his arm in the middle of the biceps with a sword, and shot with a musket-bullet in the same shoulder. *Wiemann's Surgery.*

**SKIRMISH BAY**, the name given by lieutenant Broughton to a bay in an island which was discovered by him, in lat. 43° 48' S., and long. 183° E. The Chatham armed tender, which Mr. Broughton commanded, under captain Vancouver in his voyage of discovery, worked up into the bay, and came to anchor about a mile from the shore. The lieutenant, the master, and one of the mates, landed, and found the people so extremely inhospitable, that they were obliged to fire upon them in their own defence. The land, whether island or continent, is of considerable magnitude; the part which they saw extended nearly forty miles from east to west, and the appearance of the country, according to the description given, is very promising. In many respects the natives resemble those of New Zealand; from which country they are distant about 100 leagues; but their skins were destitute of any marks, and they had the appearance of being cleanly in their persons. Their dresses were of seal or sea bear skin, and some had fine woven mats fastened round the waist. 'They seemed a cheerful race, our conversation,' says Mr. Broughton, 'frequently exciting violent bursts of laughter amongst them. On our first landing, their surprise and exclamations can hardly be imagined; they pointed to the sun and then to us, as if to ask, whether we had come from thence?' Their arms were spears, clubs, and a small weapon resembling the New Zealand patoo.

**SKIRRE**, *v. a. & v. n.* Sax. *scip*, pure, clean. To scour: ramble over in order to clear: send; run away in haste. Obsolete: but quere its connexion with the above; or whether it be not the root of **SKIRMISH**? which see.

Send out more horses, *skirre* the country round; Hang those that talk of fear. *Shakspeare. Macbeth.*

We'll make them *shirre* away as swift as stones Enforced from the old Assyrian slings. *Id. Henry V.*

**SKIR'RET**, *n. s.* Lat. *sisarum*. A plant. *Skirrets* are a sort of roots propagated by seed. *Mortimer.*

**SKIRT**, *n. s. & v. a.* Swed. *skjorte*; Goth *skaut*. The loose edge of a garment; that part which hangs loose below the waist; edge; margin: to border; run along the edge.

As Samuel turned about to go away, he laid hold upon the *skirt* of his mantle and it rent. *I Samuel xv. 27.*

He should seat himself at Athie, upon the *skirt* of that unquiet country. *Spenser on Ireland.*

It's but a night gown in respect of yours; cloth of gold and cuts, side sleeves and *skirts*, round underborne with a bluish tinsel. *Shakspeare. Much ado about Nothing.*

Of all these bounds,  
With shadowy forests, and with champaigns riched,  
With plenteous rivers, and wide skirted meads,  
We make thee lady.

*Shakspeare.*

**SKIT'TISH,** *adj.* { Belg. and Dan. *skyg*,  
Skit'tishly, *adv.* { *schew*. Shy; easily

**SKIT'TISHNESS,** *n. s.* { frightened: in fact, shy as  
anciently written, i. e. sky: the adverb and noun  
substantive corresponding.

Some men sleep in skittish fortune's hall,  
While others play the ideots in her eyes.

*Shakspeare.*

**SKONCE,** *n. s.* See SCONCE.

**SKORODITE,** a rare mineral substance, found in Saxony, Carinthia, and Cornwall. It presents itself in small crystals, derived from a right rhombic prism of 120°, but which are terminated at each extremity by four-sided pyramids. It is also found massive, and in Botryoidal masses composed of crystals, diverging from a common centre. Its colours are various shades of green: lustre, vitreous: streak, white: rather brittle: hardness, about that of flour. Before the blow-pipe it emits an arsenical odour, and melts itself into a reddish brown scoria, which acts upon the magnetic needle. It consists of

Arsenious acid . . . . .	31.40
Sulphuric acid . . . . .	1.54
Water . . . . .	18.00
Protioxide of iron, with magnesia, lime, and manganese .	47.80

**SKREEN,** *n. s.* Fr. *escran*, *escrein*, which Minshieu derives from Lat. *secerniculum*. Nimis violenter, ut solet, says Skinner; which may be true as to one of the senses; but, if the first sense of skreen be a kind of coarse sieve or riddle, it may perhaps come, if not from *cribrum*, from some of the descendants of *cerno*.—Johnson. A riddle or coarse sieve; any shelter, protection, or concealment: to sift; riddle; conceal; protect.

A skuttle or skreen to rid soil fro' the corn. *Tusser.*

The curtains closely drawn, the light to shreen.  
Thus covered with an artificial light,  
Sleep did his office.

*Dryden.*

Fenced from day by night's eternal shreen;  
Unknown to heaven, and to myself unseen. *Id.*

He that travels with them is to shreen them, and get them out when they have run themselves into the briars.

*Locke.*

Ajax interposed  
His sevenfold shield, and shreened Laertes' son,  
When the insulting Trojans urged him sore.

*Philip.*

**SKUE,** *adj.* Goth. *ska*. Oblique; sidelong. It is most used in the adverb askue or askew.

**SKULK,** *v. n.* Qu. SKUNK, which see. To hide; lurk in fear or malice.

While publick good aloft in pomp they wield,  
And private interest skulks behind the shield.

*Young.*

**SKULL,** *n. s.* Island *skiola*. The bone that encloses the head.

With redoubled strokes he plies his head;  
But drives the battered skull within the brains.

*Dryden.*

**SKULL,** *n. s.* Sax. *peole*. See SCULL.

**SKUNK** (*mephitis putorius*), a carnivorous quadruped, allied to the weasel and badger, inhabiting most parts of North America, and celebrated for the intolerable stifling stench which it discharges when threatened with danger, and which is its defence against its enemies. At other times, the animal is not at all unpleasant, and, if killed while unsuspicuous of danger, the offending glands being carefully removed, the flesh may be eaten, and is said to be well flavoured; in fact, it is frequently made use of, and is much relished by the Indians and hunters. The skunk is about as large as a cat. The dentition differs but slightly from that of the weasels. The upper lip is furnished with long whiskers; the fur is long and thick, composed of silky and woolly hairs intermixed; the color is white and blackish-brown, in large masses, but the respective distribution of these tints varies so greatly that no two individuals are to be found precisely alike. A second species inhabits South America, and perhaps there are others. The genus is exclusively American. The skunk is a nocturnal animal, and leaves its burrow in the twilight in search of small quadrupeds, and the young and eggs of birds, on which it feeds. When it gains access to the poultry-yard, it often does much mischief. The skunk seems to be perfectly aware of its powers of defence, and takes no pains to avoid man or other animals; it seems so unsuspicuous of danger as to invite attack, and strangers often pay the price of experience. Should a dog attempt to seize him, he is utterly discomfited, and runs away howling, and endeavouring to thrust his nose in the ground. The offensive fluid is ejected to a considerable distance, and is very acrimonious; the smallest drop is sufficient to render clothes detestable to the wearer and his companions for a great length of time, and without any perceptible diminution in intensity. Washing, smoking, baking, burying, in short, every process seems to be ineffectual for its removal.

**SKUNK - CABBAGE** (*symplocarpus foetida*). Among the earliest of American flowers, often, indeed, before them all, appear the large, thick, purplish and spotted spathes of this plant. The leaves are later in making their appearance, are very large, and bear no inconsiderable resemblance to those of the cabbage. The whole plant has a very strong odor, singularly like that of the skunk, but not comparable to it in intensity. The skunk-cabbage is unknown in the Southern States. It belongs to the natural family *aroidae*.

<b>SKY,</b> <i>n. s.</i>	Saxon, <i>reupa</i> ; Gothic,
<b>SKY'COLOR,</b> <i>n. s.</i>	Swed., and Dan. <i>sky</i> . The
<b>SKY'COLORED,</b> <i>adj.</i>	region which surrounds
<b>SKY'DIED,</b>	{ the earth beyond the atmosphere: the atmosphere: hence the weather,
<b>SKY'ED,</b>	
<b>SKY'EY,</b>	
<b>SKY'ISH,</b>	
<b>SKY'LARK,</b> <i>n. s.</i>	
<b>SKY'LIGHT,</b>	climate: the three compounds following explain
<b>SKY'ROCKET,</b>	themselves: skyed is enveloped by the skies;

skyey and skyish, ethereal, colored by the ether: the other compounds are also obvious in their meaning.

The mountains their broad backs upheave  
Into the clouds, their tops ascend the sky. *Milton*

A solution as clear as water, with only a light touch of *sky-colour*, but nothing near so high as the ceruleous tincture of silver. *Boyle.*

Raise all thy winds, with night involve the skies. *Dryden.*

Wide is the fronting gate, and raised on high,  
With adamantine columns threats the *sky*. *Id.*

He next proceeded to the *skylark*, mounting up by a proper scale of notes, and afterwards falling to the ground with a very easy descent. *Spectator.*

We envy not the warmer clime, that lies  
In ten degrees of more indulgent skies;  
Nor at the coarseness of our heav'n repine,  
Though o'er our heads the frozen Pleiades shine. *Addison.*

This your Ovid himself has hinted, when he tells us that the blue water-nymphs are dressed in *sky-colored* garments. *Id.*

I considered a comet, or, in the language of the vulgar, a blazing star, as a *skyrocket* discharged by an hand that is almighty. *Id.*

Their eggs, *skydyed*, a purple hue disclose. *Pope.*  
The pale deluge floats

O'er the *skyed* mountain to the shadowy vale. *Thomson.*

A monstrous fowl dropped through the *sky-light*,  
near his wife's apartment. *Arbuthnot and Pope.*

**SKYE**, the blue expanse of air or atmosphere. For the reason of its blue color and concave figure, see *OPTICS*, Index.

**SKYE**, in geography, one of the largest of the western islands of Scotland, so called from *Skianach*, which in Erse signifies winged, because the two promontories of Valerness and Trotternish, by which it is bounded on the north-west and north-east, are supposed to resemble wings. It lies between the shire of Ross and the west part of Lewis. According to the computation of Mr. Pennant, Dr. Johnson, and Dr. Campbell, it is sixty miles in length, and nearly the same in width where broadest; according to others it is fifty miles long and in some places thirty broad. The island was long divided between two proprietors; the south part belonging to the laird of Macleod, said to be lineally descended from Leod son of the black prince of Man; and the northern district, or barony of Trotternish, being the property of lord Macdonald, whose ancestor was Donald, king or lord of the isles, and chief of the numerous clan of Macdonalds, once counted the most warlike of all the Highlanders. But there are now many other proprietors.

Skye is included in the county of Inverness, and formerly belonged to the diocese of the isles: on the south it is parted from the main land by a channel nine miles in breadth; though, at the ferry of Glenelly, it is so narrow that a man may be heard calling for the boat from one side to the other. Skye is well provided with a variety of excellent bays and harbours. The surface is mountainous; some mountains are so high as to be covered with snow at the top in midsummer; in general their sides are clothed with heath and grass, which afford good pasture for sheep and black cattle. Between the mountains there are some fertile valleys, and the greater part of the land toward the sea-coast is plain and arable. The island is watered with a great number of rivers, above thirty of which afford salmon; and some of them produce black mussels in which pearls are bred, particularly the rivers Kilmartin

and Ord: Martin was assured by the proprietor of the former that a pearl had been found in it valued at £20 sterling. Here is also a considerable number of fresh-water lakes well stored with trouts and eels. The largest of these lakes takes its name from St. Columba, to whom is dedicated a chapel that stands upon a small isle in the middle of the lake. Skye likewise affords several cataracts that roar down the rocks with great impetuosity.

That the island has been formerly covered with woods appears from the large trunks of fir and other trees daily dug out of the bogs and peat-mashes in every part of it. From the height of the hills, and proximity of the sea, the air seldom continues long of the same temperature; sometimes it is dry, oftener moist, and in the end of winter and beginning of spring cold and piercing; at an average three days in twelve throughout the year are scarcely free from rain, far less from clouds. These, attracted by the hills, sometimes break in useful and refreshing showers; at other times suddenly bursting pour down their contents with tremendous noise, in impetuous torrents that deluge the plains below, and render the smallest rivulet impassable; which, together with the stormy winds so common in the country in August and September, frequently blast the hopes of the husbandman. Snow has been often known to lie on the ground from three to seven weeks; and on the highest hills, even in the middle of June, some spots of it are to be seen. To this various temperature of the air, and uncertainty of weather, the fevers and agues, headache, rheumatisms, colds, and dysenteries, which are the prevailing distempers, may be ascribed. That it is far, however, from being unwholesome, is evinced by experience; for the inhabitants are, in general, as strong and healthy, and arrive at as advanced an age, as those who live in milder climates, and under a clearer sky. The gout is scarcely known in this island. The soil is generally black, though it likewise affords white, red, and blue clay, and in some places fuller's earth. It is, however, much less adapted for agriculture than for pasture, and seldom, unless in very good years, supplies itself with a sufficiency of provisions. Yet, though the soil is not very fertile or rich, it might with proper management be made to produce more plentiful crops. But the generality of the farmers are so prejudiced in favor of old customs that they will not change them for better. With respect to improvements in agriculture, therefore, they are still much in the same state as they were thirty or forty years ago. The *cascroim*, a crooked kind of spade, is still a favorite instrument for laboring the ground used among the ordinary class of tenants. The average crops of corn are from 8000 to 9000 bushels. 500 tons of kelp are annually manufactured, and 1000 head of cattle exported. It is divided into seven parishes, in each of which there is a school, besides three charity-schools in different places. The chief minerals are lead and iron ore, which, however, have never been wrought to any advantage. Near the village of Sartle the natives find black and white marcasites, and variegated pebbles. Applesglen, in the neighbourhood of Loch-fallart.

produces beautiful agates of different sizes and colors : stones of a purple hue are, after great rains, found in the rivulets : crystal of different colors and forms abounds in several parts of the island, as well as black and white marble, freestone, lime-stone, and talc : small red and white coral is found on the southern and western coasts in great abundance. The fuel consists chiefly of peat and turf, which are impregnated with iron ore and saltpetre ; and coal has been discovered in several districts. The wild birds are solan geese, gulls, cormorants, cranes, wild geese, wild ducks ; eagles, crows, ravens, rooks, cuckoos, rails, wood-cocks, moor-fowls, partridges, plovers, wild pigeons, and blackbirds, owls, hawks, snipes, and a variety of small birds. In mild seasons the cuckoo and rail appear in the end of April ; the former disappears always before the end of June ; the latter sometimes not till September. The woodcock comes in October, and frequently remains till March. The tame sorts of fowls are geese, ducks, turkeys, cocks, pullets, and pigeons. The black cattle are here exposed to all the rigors of the severe winter, without any other provender than the tops of the heath and the alga marina ; so that they appear like mere skeletons in the spring ; though, as the grass grows up, they soon become plump and juicy, the beef being sweet, tender, and finely interlarded. The amphibious animals are seals and otters. Among the reptiles are vipers, asps, frogs, toads, and three different kinds of serpents ; the first spotted black and white, and very poisonous ; the second yellow, with brown spots ; and the third of a brown color, the smallest and least poisonous. Weasels are also numerous. Wales and cairbans, or sunfish, come in sometimes to the sounds after their prey, but are rarely pursued with any success. The fishes commonly caught on the coast are herrings, ling, cod, scate, haddock, mackerel, lythe, sye, and dog-fish. The kyle of Scalpe teems with oysters in such a manner that, after some spring-tides, twenty horse loads of them are left upon the sands. Near the village of Bernstill the beech yields mussels sufficient to maintain sixty persons per day ; this providential supply helps to support many poor families in times of scarcity.

The people are strong, robust, healthy, and prolific. They generally profess the Protestant religion ; are honest, brave, innocent, and hospitable. They speak the language, wear the habit, and observe the customs, that are common to all the Hebrides. The meconium in new-born infants is purged away with fresh butter : the children are bathed every morning and evening in water, and grow up so strong that a child of ten months is able to walk alone : they never wear shoes or stockings before the age of eight or ten, and night-caps are hardly known ; they keep their feet always wet ; they lie on beds of straw or heath, which last is an excellent restorative : they are quick of apprehension, ingenuous, and very much addicted to music and poetry. They eat heartily of fish ; but seldom regale themselves with flesh : their ordinary food consists of butter, cheese, milk, potatoes, calewort, brochan, and a dish called oon, which is the froth of boiled milk or whey raised with a stick, like that used in

making chocolate. A sort of coarse woollen cloth called cloa, or cadoes, the manufacture of their wives, made into short jackets and trousers, is the common dress of the men. The philibeg is rarely worn, except in summer and on Sundays ; on which days, and some other occasions, those in better circumstances appear in tartans, a bonnet, and short hose, and some in a hat, short coat, waistcoat, and breeches, of Scottish or English manufacture. The women are in general very cleanly, and so excessively fond of dress, that many maid-servants are often known to lay out their whole wages that way. There are two fairs held annually at Portree, to which almost every part of Skye sends cattle. The first is held in the end of May, and the second in the end of July. The fair commonly continues from Wednesday till Saturday. The commodities are horses, cows, sheep, goats, hides, butter, cheese, fish, and wool. The cattle swim over to the main land through a mile or half a mile of sea. Thousands of these are yearly exported at from £2 to £3 each. Many of them are driven to England, where they are fattened for the market, and counted delicious. In Skye appear many ruins of Danish forts, watch towers, beacons, temples, and sepulchral monuments. All the forts are termed Duns ; as Dun-Skudborg, Dun-Derig, Dun-Skeriness Dun-David, &c.

**SKY-COLOR**, in the arts. To give this color to glass, set in the furnace a pot of pure metal of fritt from rochetta or barilla, but the rochetta fritt does best ; as soon as the metal is well purified, take for a pot of twenty pounds of metal six ounces of brass calcined by itself ; put it by degrees at two or three times into the metal, stirring and mixing it well every time, and skimming the metal with a ladle ; at the end of two hours the whole will be well mixed, and a proof may be taken ; if the color be found right, let the whole stand twenty-four hours longer in the furnace, and it will then be fit to work, and will prove of a most beautiful sky-color. See Neri's Art of Glass, p. 40.

**SKYRO**, or SKYROS, an island of the Greek Archipelago, east of Negroponte, about sixty miles in circumference, and chiefly covered by steep, naked rocks : there are however some valleys fruitful in wheat, barley, and tolerable wine. A Greek bishop resides on it, in a small town of this name.

**SLAB**, *adj. & n. s.* **Belgic slabbern** ; **SLAB'BER**, *v. n. & v. a.* } **Teut. schlabbē**. Thick ; **SLAB'BY**, *adj.* } **viscous ; glutinous** : a thick and flat stone or slice of wood. See **SLIVE**. To slabber is to let spittle fall, or smear with spittle : slabby, thick, viscous.

The milk-pan and cream-pot so **slabbered** and **tost** That butter is wanting, and cheese is half lost. **Tusser.**

Nose of Turk, and Tartar's lips ;  
Finger of birth-strangled babe,  
Ditch-delivered by a drab ;  
Make the gruel thick and **slab**.

**Shakspeare. Macbeth.**  
When waggish boys the stunted besom ply,

To rid the **slabby** pavements, pass not by. **Gay.**

He **slabbered** me all over, from cheek to cheek, with his great tongue.

*Arbuthnot's History of John Bull.*

In the cure of an ulcer, with a moist intemperies, *slabby* and greasy mendicaments are to be forborn, and drying to be used. *Wiseman's Surgery.*

**SLAB-LINE**, in sea language, a small cord passing up behind a ship's main-sail or fore-sail; and, being reeved through a block attached to the lower part of the yard, is thence transmitted in two branches to the foot of the sail, to which it is fastened. It is used to truss up the sail as occasion requires, and more particularly for the convenience of the pilot or steersman, that he may look forward beneath it as the ship advances.

**SLACK**, *adj., v. n. & v. a.* *Sax. pleac;* *Is.* *SLACK'EN*, *v. n. & v. a.* *{ slaken;* *Swedish* *SLACK'LY*, *adv.* *{ slak;* *Belg. slaak;* *SLACK'NESS*, *n.s.* *{ Welsh yslack.*

Loose; not tense; not hard drawn; relaxed; remiss: to slack or slacken is to abate; lose cohesion; be remiss or to neglect; loosen; relax; remit; ease; withhold; repress: the adverb and noun substantive corresponding.

When thou shalt vow a vow unto the Lord, slack not to pay it. *Deuteronomy xxviii. 21.*

Men, having been brought up at home under a strict rule of duty, always restrained by sharp penalties from lewd behaviour, so soon as they come thither, where they see laws more slackly tended, and the hard restraint which they were used unto now slack'd, they grow more loose. *Spenser.*

Thus much help and furtherance is more yielded, in that, if so be our zeal and devotion to God-ward be slack, the alacrity and fervour of others serveth as a present spur. *Hooker.*

It concerneth the duty of the church by law to provide, that the looseness and slackness of men may not cause the commandments of God to be unexecuted. *Hooker.*

Seeing his soldiers slack and timorous, he reproved them of cowardice and treason. *Knowles.*

Through the slackness of motion, or long banishment from the air, it might gather some aptness to putrefy. *Brerewood.*

He that so generally is good, must of necessity hold his virtue to you, whose worthiness would stir it up where it wanted, rather than slack it where there is such abundance. *Shakespeare.*

That a king's children should be so conveyed, So slackly guarded, and the search so slow That could not trace them. *Id. Cymbeline.*

These thy offices, So rarely kind, are as interpreters Of my behind-hand slackness. *Id. Winter's Tale.*

You may sooner by imagination quicken or slack a motion, than raise or cease it; as it is easier to make a dog go slower than make him stand still. *Bacon.*

This makes the pulses beat, and lungs respire; This holds the sinews like a bridle's reins; And makes the body to advance, retire, To turn, or stop, as she them slacks or strains. *Davies.*

My guards Are you, great powers, and the unbated strength Of a firm conscience; which shall arm each step Ta'en for the state, and teach me slack no pace. *Ben Jonson.*

This good chance, that thus much favoureth, He slacks not. *Daniel's Civil War.*

This doctrine must supersede and slacken all industry and endeavour, which is the lowest degree of that which hath been promised to be accepted by

Christ; and leave nothing to us to deliberate or attempt, but only to obey our fate. *Hammond.*

Here have I seen the king, when great affairs Gave leave to slacken and unbend his cares, Attended to the chase by all the flower Of youth, whose hopes a nobler prey devout.

*Denham,*  
*From his slack hand the garland wreathed for Eve*  
*Down dropped, and all the faded roses shed.*  
*Milton.*

Whence these raging fires Will slacken, if his breath stir not their flamés. *Id.*

With such delay well pleased, they slack their course. *Id.*

Extol not riches then, the toil of fools, The wise man's cumbrance, if not snare; more apt To slacken virtue, and abate her edge, Than prompt her to do aught may merit praise. *Id.*

From man's effeminate slackness it begins, Who should better hold his place By wisdom, and superior gifts received. *Id. Paradise Lost.*

Rebellion now began, for lack Of zeal and plunder, to grow slack. *Hudibras.*

Nor were it just, would he resume that shape, That slack devotion should his thunder 'scape. *Waller.*

Balls of this metal slacken Atlanta's pace, And on the am'rous youth bestowed the race. *Id.*

Their pace was formal, grave, and slack; His nimble wit outran the heavy pack. *Dryden.*

Had Ajax been employed, our slackened sails Had still at Aulis waited happy gales. *Id.*

Slack not the good presage, While heaven inspries Our minds to dare, and gives the ready fires. *Id.*

A handful of slack dried hops spoil many pounds, by taking away their pleasant smell. *Mortimer's Husbandry.*

Some unslackled lime cover with ashes, and let it stand till rain comes to slack the line; then spread them together. *Id.*

The fire, in lime burnt, lies hid, so that it appears to be cold; but water excites it again, whereby it slackens and crumbles into fine powder. *Merton's Mechanical Exercises.*

I should be grieved, young prince, to think my presence Unbent your thoughts, and slackened 'em to arms. *Addison.*

The vein in the arm is that which Arætus commonly opens; and he gives a particular caution, in this case, to make a slack compression, for fear of exciting a convulsion. *Arbuthnot.*

When they have no disposition to shoot out above their lips, there is a slackness to heal, and a cure is very difficultly effected. *Sharp's Surgery.*

Taught power's due use to people and to kings, Taught nor to slack nor strain its tender strings. *Pope.*

On our account has Jove, Indulgent, to all moons some succulent plant: Allowed, that poor helpless man might slack His present thirst and matter find for toil. *Philips.*

**SLACKEN**, in metallurgy, a term used by the miners to express a spongy and semivitrified substance which they used to mix with the ores of metals, to prevent their fusion. It is the scoria or scum separated from the surface of the former fusions of metals. To this they frequently add lime-stone, and sometimes a kind of coarse iron-ore, in the running of the poorer gold ores.

**SLACK-WATER**, in sea language, denotes the interval between the flux and reflux of the tide or between the last of the ebb and the first of the

flood, during which the current is interrupted, and the water apparently remains in a state of rest.

**SLAG**, *n. s.* Swed. *slagge*. The dross or recrement of metal.

Not only the calces but the glasses of metal may be of differing colours from the natural colour of the metal, as I have observed about the glass or *slag* of copper. *Boyle.*

**SLAINS**, a parish of Scotland, in Aberdeenshire, on the coast of Buchan, about five miles long, and three broad, of a triangular form. The sea-coast extends six miles, four of which are rocky and two sandy. The rocks are high, indented with immense chasms, and abounding with capacious caves. One of these is above 200 feet long, and another, called the Dropping Cave, or White Cave, is covered on the inside with beautiful white stalactites. The surface is level; the soil fertile; and as gravel, shells, sand, marl, and lime-stone, abound, agriculture is much improved. The ruins of the ancient castle of Slains, which was demolished in 1594 by James VI., on Huntly's rebellion, are still to be seen upon a peninsulated rock. There are also relics of a chapel built in the seventh century, and dedicated to St. Adamnan, the disciple of St. Columba.

**SLAKE**, *v. a. & v. n.* From slack.—Skinner; from Island. *slack*, to quench.—Mr. Lye; Goth. *lekka*.—Thomson. To quench; extinguish; go out; to grow less loose or relaxed: confounded with SLACK.

He did always strive

Himself with salves to health for to restore,  
 And *slake* the heavenly fire that raged evermore. *Spenser.*

If I digged up thy forefathers' graves,  
 And hung their rotten coffins up in chains,  
 It could not *slake* mine ire, nor ease mine heart. *Shakspeare. Henry VI.*

If she the body's nature did partake,  
 Her strength would with the body's strength decay;  
 But when the body's strongest sinews *slake*,  
 Then is the soul most active, quick, and gay. *Davies.*

She with her cold hand *slakes*  
 His spirits, the sparks of life, and chills his heart. *Crashaw.*

She perceiving that his flame did *slake*  
 And loved her only for his trophy's sake. *Browne.*  
 From *Iulus'* head

A lambent flame arose, which gently spread  
 Around his brow, and on his temples fed:  
 Amazed, with running water we prepare,  
 To quench the sacred fire, and *slake* his hair. *Dryden.*

Coarse are his meals, the fortune of the chace;  
 Amidst the running stream he *slakes* his thirst. *Addison's Cato.*

That which he saw happened to be fresh lime, and gathered before any rain had fallen to *slake* it. *Woodward.*

The fragrant fruit from bending branches shake,  
 And with the crystal stream their thirst at pleasure  
 *slake.* *Blackmore's Cleopatra.*

**SLANDER**, *v. a. & n. s.* Fr. *eslaundrie*; *SLANDERER*, *n. s.* Lat. *scandalum*. To censure falsely; be-  
*SLANDEROUS*, *adj.* lie: a false invention; reproach; disgrace: a slanderer is a Vol. XX.

calumniator: the adjective and adverb corresponding.

He hath *slandered* thy servant unto the king.

*2 Sam. xix. 27.*

I was never able till now to choke the mouth of such detractors with the certain knowledge of their *slanderous* untruths. *Spenser on Ireland.*

I may the better satisfy them who object these doubts, and *slanderously* bark at the courses which are held against that traitorous earl and his adherents. *Id.*

Give me leave to speak as earnestly in truly commanding it, as you have done in untruly, and unkindly defacing and *slanderizing* it. *Whitgife.*

*Slander Valentine*

With falsehood, cowardice, and poor descent. *Shakspeare*

When *slanders* do not live in tongues;

When cut-purses come not to thongs.

*Id. King Lear*

Thou *slander* of thy mother's heavy womb!

Thou loathed issue of thy father's loins.

*Id. Richard III.*

What king so strong  
 Can tie the gall up in the *slanderous* tongue? *Shakspeare.*

Since that, we hear he is in arms,

We think not so;

Yet charge the consul with our harms,

That let him go:

So in our censure of the state

We still do *wander*,

And make the *careful* magistrate

The mark of *slander*. *Ben Jonson's Catiline*

They did *slanderously* object,

How that they durst not hazard to present

In person their defences. *Daniel's Civil War.*

In your servants suffer any offence against you-  
self rather than against God; endure not that they  
should be railers, *slanderers*, telltales, or sowers of  
dissension. *Taylor.*

There are not only *slanderous* throats, but *slander-*  
*ous* ears also; not only wicked inventions, which en-  
gender and brood lies, but wicked assents, whirr  
hatch and foster them. *Barrow.*

Thou shalt answer for this, thou *slanderer*! *Dryden.*

Thou dost with lies the throne invade

By practice hardened in thy *slanderous* trade;

Obtaining heaven for whate'er ills befall,

And spott'ring under specious names thy gall. *Id.*

We are not to be dejected by the *slanders* and ca-  
lumnies of bad men, because our integrity shall then  
be cleared by Him who cannot err in judgment. *Nelson*

As by flattery a man opens his bosom to his mor-  
tal enemy, so by detraction and a *slanderous* misreport  
he shuts the same to his best friends. *South.*

Of all her dears she never *slandered* one,  
But cares not if a thousand are undone. *Pope*

To me belongs

The care to shun the blast of *slanderous* tongues;  
Let malice, prone the virtuous to defame,  
Thus with vile censure taint my spotless name. *Id.*

**SLANT**, *adj.* From Dutch *slanghe*, a ser-  
**SLANT'ING**, } pent.—Skinner. Swed. *slanke*,  
**SLANT'WISE**, } is to slide off. Oblique; not  
direct; not perpendicular.

Some maketh a hollowness half a foot deep,  
With fower sets in it, set *slantwise* asteepe. *Tusser.*

Late the clouds

Justling; or pushed with winds, rude in their shock, *2 F*

Tine the *slant* lightning ; whose thwart flame driven down

Kindles the gummy bark of fir and pine. *Milton.*

The sun

Around the globe describes the' equator line ;  
By which wise means he can the whole survey,

With a direct or with a *slanting* ray,

In the succession of a night and day. *Blackmore.*

The night was winter in its roughest mood ;  
The morning sharp and clear. But now at noon  
Upon the southern side of the *slant* hills,  
And where the woods fence off the northern blast,  
The season smiles, resigning all its rage,  
And has the warmth of May. *Cowper.*

**SLAP**, *n. s., adv. & v. a.* { Teut. *schlap* ;

**SLAPDASH'**. *interj.* { Goth. *slap*. A

blow. Properly with the hand open, or with something rather broad than sharp.

Dick, who thus long had passive sat,  
Here stroak'd his chin, and cocked his hat ;  
Then *slap't* his hand upon the board,  
And thus the youth put in his word. *Prior.*

And yet, *slapdash*, is all again

In every sinew, nerve, and vein. *Id.*

Peg's servants complained ; and, if they offered to come into the warehouse, then straight went the yard *slap* over their noddle. *Arbuthnot's History of John Bull.*

The laugh, the *slap*, the jocund curse go round. *Thomson.*

**SLASH**, *v. a. v. n. & n. s.* Island. *slasa*, to strike. To cut ; cut with long cuts : lash ; to strike at random : a cut or wound.

The knights with their bright burning blades  
Broke their rude troops, and order did confound,  
Hewing and *slashing* at their idle shades. *Faerie Queene.*

What ! this a sleeve ?

Here's snip and nip, and cut, and slish and *slash*,  
Like to a censor in a barber's shop. *Shakspeare.*

Some few received some cuts and *slashes* that had drawn blood. *Clarendon.*

Daniel, a sprightly swain, that used to *slash*  
The vig'rous steeds that drew his lord's calash,  
To Peggy's side inclined. *King.*

Distinguished *slashed* deck the great :

As each excels in birth or state,

His oylet-holes are more and ampler :

The king's own body was a sampler. *Prior.*

Not that I'd lop the beauties from his book,

Like *slashing* Bentley with his desp'rare hook. *Pope.*

**SLATE**, *n. s. & v. a.* From slit : slate is in some counties a crack ; or from Fr. *esclate*, a tile —Johnson. But Sax. *flirth* is, flat ; even ; smooth ; and a more probable derivation. A gray stone, easily broken into thin plates, used to cover houses, or write upon. See below. To cover with slates.

A square cannot be so truly drawn upon a *slate* as it is conceived in the mind. *Grew's Cosmologia.*

A small piece of a flat *slate* the ants laid over the hole of their nest, when they foresaw it would rain. *Addison's Spectator.*

All the stone that is *slaty*, with a texture long, and parallel to the sight of the stratum, will split only lengthways or horizontally ; and, if placed in any other position, 'tis apt to give way, start, and burst, when any considerable weight is laid upon it. *Woodward on Fossils.*

Sonnets and elegies to Chloris

Would raise a house about two stories,

A lyrick ode would *slate*. *Swift.*

**SLATE** (*stegania*), a stone of a compact texture and laminated structure, splitting into fine plates. See MINERALOGY. Dr. Hill distinguishes four species of stegania. 1. The whitish steganium,

being a soft, friable, slaty stone, of a tolerably fine and close texture, considerably heavy, perfectly dull and destitute of brightness, variegated with a pale brown or brownish-yellow. This species is common in many counties of England, lying near the surface of the ground. It is generally very full of perpendicular, as well as horizontal, cavities, many of which are filled up with a spar a little purer and more crystalline than the rest ; and is commonly used for covering houses.

2. The red steganium is a very fine and elegant slate, of a smooth surface, firm and compact texture, considerably heavy, and of a very beautiful pale purple, glittering all over with small glossy spangles : it is composed of a multitude of very thin plates or flakes, laid closely and evenly over one another, and cohering pretty firmly : this is very common in the northern parts of England, and is much valued as a strong and beautiful covering for houses.

3. The common blue steganium is very well known as a useful and valuable stone, of a fine smooth texture and glossy surface, moderately heavy, and of a pale grayish-blue ; composed of a multitude of even plates, laid close upon one another, and easily splitting at the commissures of them ; this is also very common in the north parts of England, and is used in most places for the covering of houses.

There are other species of this slate, viz. the brownish-blue friable steganium, usually called coal-slate ; the grayish-black friable steganium, commonly called shiver ; and the grayish-blue sparkling steganium.

4. The friable, aluminous, black steganium, being the Irish slate of the shops : this is composed of a multitude of thin flakes, laid very evenly and regularly over one another, and splits very regularly at the commissures of them. It is common in many parts of Ireland, and is found in some places in

England, always lying near the surface in very thick strata. In medicine it is used in hemorrhages of all kinds with success, and is taken often as a good medicine in fevers. The island of Eusdale, one of the Hebrides, on the west coast of Scotland, is entirely composed of slate. .

The localities of *common slate* are so numerous that it is to attempt almost an endless task to point them out. Roof-slate is found on the western side of our island in the counties of Cornwall and Devon, in various parts of North Wales and Anglesey, on the north-west parts of Yorkshire, near Ingleton, and in Swaledale, also in the counties of Cumberland and Westmoreland. It occurs in a low range of mountains at Chamwood forest, in Leicestershire, near the centre of England. Slate abounds in various parts of Scotland, and in Wicklow, and other mountainous parts of Ireland.

France possesses many valuable beds of roof-slate, near Laferriere in Normandy, and in the neighbourhood of Angers. The last is the most important, as furnishing slate of the most perfect quality, and its extent makes it regarded as inexhaustible. It is further remarkable on account of the very singular and interesting organic re-

mains that occur between some of the laminæ. The bed extends for a space of two leagues, passing under the town of Angers, which is built as well as covered with it; those blocks being employed in masonry which are the least divisible. The quarries which are actually explored are all in the same line from west to east, as well as the ancient pits, the bed of the best roof-slate rising to the surface in this direction. Immediately under the vegetable earth is found a brittle kind of slate, which, for four or five feet deep, splits into rhomboidal fragments. A little lower is what is called the building-stone, which is a firm slate, but scarcely divisible. This is employed in the construction of houses, after it has been sufficiently hardened by exposure to the air. At fourteen or fifteen feet from the surface is found the good slate, which has been quarried to the perpendicular depth of about 300 feet; the remaining thickness being unknown. The interior of this great mass is divided by many veins or seams of calcareous spar and quartz, about two feet thick, by fifteen or sixteen in height; these veins are parallel, and proceed regularly from west to east, in a position rising  $70^{\circ}$  S.; they are intersected by other veins at intervals of a similar kind, but whose rise is  $70^{\circ}$  N.; so that, when they meet the former, they either form rhombs, or half rhombs, which have been compared to the letter V, some being upright, and others reversed. All the layers, or laminae, of the slate, have a direction similar to those of the veins of quartz, which rise  $70^{\circ}$  S.; and, when intersected by veins that have an opposite inclination, the direction of the slaty laminae is not changed. The whole mass is thus divided into immense rhomboids, composed of plates all parallel among themselves, and with two of the faces of the rhomboid. The slate is extracted in blocks of a fixed size, which are divided into leaves for roofing-slate. It is betwixt these leaves that there are frequently found vestiges of marine animals, and particularly pyritous impressions of pous de mur (the sea-louse, a small univalve shell), also of small cheviettes (shrimps or prawns), and a species of crab, of which the body is about a foot in breadth and fourteen or fifteen inches in length, the tail having nine or ten rings. The shrimps are sometimes so numerous that forty have been counted on a slate of a foot square. None of the animals resemble any known existing species. But the most remarkable circumstance in these impressions, particularly in the large crabs, is, that though there be no sign of the body having been crushed, yet it can scarcely be said to have any thickness whatever. They rather resemble engravings than figures in relief. A series of these leaves may be compared to a set of books placed upon shelves; and the impressions of crabs, and other marine animals, to engraved plates in the volumes; they do not, in fact, occupy more thickness. It is equally difficult to conceive how the bodies of these animals, though perfectly defined, could be reduced to a simple surface, without thickness.

These slates also present beautiful dendritical pyrites, more than a foot in extent. The pyrites are sometimes in small grains, disseminated,

like dust, upon the surface of the slates, where may also be observed many little stars of selenite. When the blocks of slate have been drawn from the quarry, if they are left exposed to the sun, or the open air, for some days, they lose what is called the quarry water, and then become hard and untractable, and can only be employed as building stone. Frost produces a singular effect on these blocks: while frozen they may be broken with more ease than before; but, if thawed rather quickly, they are no longer divisible: yet this quality may be restored by exposing them once more to the frost; but, if the operation be often repeated, it becomes impossible to reduce them to leaves.

Only one slate quarry is said to be opened in Italy; i. e. at Lavagna, in Genoa; it furnishes slate of an excellent quality, and so impervious that it serves to line the cisterns in which olive oil is preserved. The canton of Glaris, in Switzerland, is the only one in which roof-slate is procured. Roof-slate occurs in Saxony, and in various mountainous districts in the north of Europe; it is found also on the continent of North America; and as it is only a modification of clay-slate, which is an abundant rock, it is probable that its localities are much more numerous than are at present known in alpine districts in every part of the globe.

We believe all the roof-slate quarries at present worked are those which accident has discovered. This neglect is the more remarkable, when we consider the great expense frequently incurred in searching for coal, a substance of much less value in proportion to its weight. The best beds of roof-slate improve as they sink deeper into the earth; and few, if any, are of a good quality near the surface. There cannot be a doubt that many beds of slate, which appear shattered and unfit for architectural use, would be found of a good quality a few yards under the surface; for the best, in many quarries, loses its property of splitting into thin laminae by exposure to the air.

In Great Britain we have heard of but two places where slate is worked as a mine under ground: one is worked in this way by penetrating the interior of the mountain at Place Fell, on the head of the lake of Ullswater, in Cumberland; and another on the western side of Yorkshire, adjoining Westmoreland; in many other situations it is probable that slate might be worked to advantage, in subterranean galleries, similar to those at Charleville; for as this mineral is generally of a better quality at a considerable depth, the expense of procuring it by mining would be much less than that of removing the load of upper rocks, and working it in open quarries.

The mouth of the mine at Charleville is near the summit of a hill: the bed inclines  $40^{\circ}$  to the horizon: it is about sixty feet in thickness, but its extent and depth are unknown. It has been pursued, by a principal gallery, to the depth of 400 feet; and they have driven many lateral galleries, which extend about 200 feet on the side of the main gallery, where twenty-six ladders are placed in succession, for the passage of the workmen and the carriage of the slate.

In this bed, which is sixty feet in thickness, there are only forty feet of good slate, the other being mixed with quartz. They cut the slate into blocks of about 200 lbs., which they call *faix*: every workman, in his turn, carries them on his back to the very mouth of the pit, mounting his twenty-six ladders, or a part of them, according to the depth of the bed where he is working. When brought to day, these blocks are first split into thick tables, which are called *repartons*. The workman holds the block between his legs, puts a chisel on the side, and divides it with a blow of a mallet. The repartons are divided in a similar manner into roof-slates. These operations must be performed soon after the blocks are drawn from the quarry; for, if the stone has time to dry, it would no longer be possible to split it. Some of the slate galleries pass under the river Meuse.

A reddish-purple slate from North Wales contained, according to Kirwan, '38 silex, '26 alumine, '8 magnesia, '4 lime, and '4 parts iron; but, as there is in this analysis a loss of ten per cent., it cannot be considered as very accurate. As the hardness of slate arises principally from the silex it contains, which is of all the earths the least favorable to vegetation, those slates which are the hardest when first taken from the quarry, and which have the least specific gravity, are to be preferred; for the increase of weight in slates is owing to the presence of iron, either in pyrites, or a state of oxide. To the presence of iron, many kinds of stone and slate also owe their tendency to decomposition. The pyrites being decomposed by moisture, and the iron admitting a still higher degree of oxygenation, the surface of the stone swells and peels off, or falls into an ochrey powder.

Dr. Watson, the late bishop of Landaff, says, the specific gravity of the Westmoreland slate varies in different quarries, from 2797 to 2732 ounces the cubic foot. The effect of frost is very sensible on tiled houses, but is scarcely felt on slated houses; for good slate imbibes very little water. According to an experiment made by him on Westmoreland slate, compared with tile, in which two pieces of each, about thirty inches square, were immersed in water ten minutes, and then taken out and weighed, as soon as they ceased to drop; the tile had imbibed about one-seventh of its weight of water, and the slate had not absorbed the  $\frac{1}{50}$ th part of its weight: indeed the wetting of the slate was merely superficial. When placed before the fire, in a quarter of an hour the slate was of the same weight as it had been before it was put into the water; but the tile had only lost about twelve grains of its moisture, which was as near as could be expected to the quantity which had been spread over its surface; for it was the amount gained by the slate, the surface of which was equal to that of the tile. The tile was left to dry six days, in a room heated to  $60^{\circ}$ , but did not lose all the water it had imbibed till the end of that time. The slate in Westmoreland is blasted from the quarry in large masses, and split with proper tools by the workmen. Though the specific gravity of Westmoreland slate from different quarries is nearly the same, yet all the

sorts are not capable of being split into an equal degree of thinness. Here also the quality varies with the depth of the quarry, that being the best which is raised from the greatest depth. The gray-blue slate from Donyball, in Cornwall, weighs only 2512 ounces to the cubic foot, which is considerably lighter than that of Westmoreland. This slate is generally preferred to any other for its lightness, and enduring the weather; but Dr. Watson is of opinion that in durability it does not excel that of Westmoreland. The Donyball slate is split into laminae about one eighth of an inch thick, when it is applied to the covering of a roof; it then weighs rather more than twenty-six ounces to the square foot. The pale blue slate from Ambleside, in Westmoreland, weighs about two ounces more in the square foot than the former. In many instances, we believe, slate of a thinner kind is used in several modern buildings, to save the expense of timber in the roof, where cheapness rather than durability is a principal object with the architect. According to an estimate of Dr. Watson, the weights of a covering of the following different materials, for forty-two square yards of roof, are as under:—

	Cw <sup>t</sup>
Copper . . . . .	4
Fine slate . . . . .	26
Lead . . . . .	27
Coarse slate . . . . .	36
Tile . . . . .	54

A ton of fine slate will cover a larger surface than a ton of lead; and, where there is water carriage, does not cost one-fourth of the price. Slate might, therefore, be used generally instead of lead, with great advantage.—Watson's Chemical Essays, vol. iv.

The most extensive slate quarries in Great Britain are near Bangor, in Caernarvonshire. There is a rail road formed from the quarries to the sea: but perhaps the most remarkable situation in the world where slate is procured is in Cumberland, at Houstont cragg, a lofty mountain near the lake of Buttermere, about 2000 feet above the level of the lake, and nearly perpendicular. On account of the difficulty of access, the workmen take their provisions for the week, and sleep in temporary huts on the summit. During the winter they are generally involved in clouds, and not unfrequently blocked up by the snow. The slate is conveyed down a zigzag path cut in the rock on sledges, one man attending to prevent the acceleration of the descent. When the slate is emptied at the bottom, the sledge is carried back on his shoulders to the summit.

Whitby alum slate has a very dark gray color, a slaty structure, and rather a silky lustre; it splits, by exposure to the atmosphere, into very thin laminae; it varies in hardness, but is all softer than roof slate. The particular advantage which the country near Whitby possesses for the manufacture of alum is derived from the alum slate rising in precipitous cliffs, which afford facilities for working and burning the stone. Though many of the coal shales might yield an equal quantity of alum, the difficulty of raising

them to the surface would in most situations be too great to repay the expense. The alum slate is piled in vast heaps and set fire to; a slow combustion is continued for several months, by the inflammable matter combined with the stone. The saline contents are extracted by solution, a small quantity of potash is added, and the alum is crystallised by evaporation.—Bakewell's Introduction to Geology.

From this alum rock of Yorkshire nearly all the alum of commerce in England is produced. According to Klaproth, alum slate contains:—

Sulphur . . . . .	0·28
Carbon . . . . .	1·96
Alumine . . . . .	1·60
Silex . . . . .	4·00
Black oxide of iron . . . . .	0·64
Sulphate of iron, lime, and potash, each . . . . .	0·15
Water . . . . .	0·70

This writer remarks that the sulphur, in the alum slate which he analysed, was not united to the iron, but to the carbon, in a manner at present unknown. In the alum slate of Whitby the sulphur seems combined both with the iron and carbon.

Drawing slate, which frequently accompanies alum slate, is much softer than common slate, and contains, like alum slate, a considerable portion of carbon: its color is a grayish-black: it is known by the property which it possesses of leaving a dark line when rubbed on paper. It is soft, and sometimes rather unctuous: some varieties have a small degree of lustre. The fracture, in small fragments, is scarcely slaty, and sometimes approaches the conchoidal. Drawing slate is easily cut with the knife. Under the blowpipe it turns white or yellow. It sometimes effloresces like alum slate. According to Wiegleb, it contains

Silex . . . . .	64
Alumine . . . . .	21·25
Carbon . . . . .	11
Oxide of iron . . . . .	2·75
Water . . . . .	7·50

This slate is employed by masons, carpenters, &c., to mark with. When fine and pure, it is used by artists for designs. In France it is called pierre d' Italie; in England, French chalk. It is found in France, near Sérin, in the department of l'Orne, and in the environs of Cherbourg. It is found also in Spain and Italy.

Hone whet-slate (novaculite of Kirwan) occurs imbedded in clay slate: and is of a greenish-gray color, inclining to yellow; it is much harder than common slate; its texture fine grained, nearly compact, and the fracture of the small pieces splintery or conchoidal, resembling flinty slate. Its specific gravity about 2·72. Translucent on the edges, it does not effervesce with acids, and it melts into a brown enamel under the blowpipe. From its green color, and rather greasy feel, it may be considered as intermediate between hard talcous slate and clay slate. Though it yields to the point of a knife, or even of a copper tool, it acts upon the flattened or round surfaces of metals, and is used for sharpening and polishing the finer kinds of cutlery. It is

of considerable value on account of this property. The common kind is procured from Saxony; and a finer quality in the promontory of Howth, near Dublin.

SLATING is employed, in architecture, in sundry ways, the principal of which refers to the covering of the roofs of buildings, but such has been lately the perfection of working in slate, that it is now wrought and fitted into many useful utensils, as well as made up into balconies, chimney-pieces, casings to walls, skirtings, staircases, &c. &c. The slate principally in use in London is brought from Wales, taken from out of quarries, which are worked on the lord Penhryn's estate at Bangor, in Caernarvonshire, and it is thence forwarded to all parts of the united kingdom. There are also in use some other kinds of slate, the best sort of which is brought from Kendal, in Westmoreland, and is called Westmoreland slate. These slates are of a fine pale bluish-green color, and are most esteemed of any by the architects. They are not of a large size, but they are of good substance, and well calculated to give a neat appearance to the roof on which they may be placed. The slate brought from Scotland is nearly similar in both size and quality to a slate from Wales, called Ladies, from which circumstance they are very little sought after.

The French slates were very much in use in this country about seventy years since. They are small in size, most commonly not larger than the Welsh doubles, excessively thin, and consequently light; but thin composition has been found not to be well adapted to this climate, where there is an atmosphere containing an excess of moisture. By analysis, this slate is ascertained to contain one-thirtieth of manganese, besides other matters, such as iron, &c., the excessive affinity of which for oxygen soon shivers the stony portion of the slate into atoms, when employed as a covering to buildings in this country. The writer of this article has seen slates of this kind on a roof reduced to the state of powder, having become so by exposure, and appeared to be completely decomposed.

*Of the pitch of a roof.*—This, in as far as the elevation of the rafters is to be considered, is found to vary in different climates. In Italy, and all the southern parts of Europe, it is made generally less than one-fourth of the span or breadth. In England it was formerly three-fourths, but it is now made to approach much nearer to the Italian proportion. In northern climates a steep roof is required, on account of the great falls of snow to which they are liable, and which greatly increase the lateral thrust of the rafters. For the horizontal force exerted by a roof, if it be considered with reference to the walls which sustain it, is in proportion to the length of a line perpendicular to the rafter descending from its extremity till it meets another similar line drawn from the opposite rafter, and this perpendicular is obviously increased when the roof is made very flat. But a flat pitched roof is stronger than a high one for resisting all transverse strains which tend to break the rafters. Slaters class the Welsh slates after the following order and designations, viz.

	Ft.	Inch.	Ft.	Inch.
Doubles, average size . . . . .	1	1 by 0	6	
Ladies . . . . .	1	3 by 0	8	
Countesses . . . . .	1	8 by 0	10	
Duchesses . . . . .	2	0 by 0	12	
Welsh Rags . . . . .	3	0 by 2	0	
Queens . . . . .	3	0 by 2	0	
Imperials . . . . .	2	6 by 2	0	
Patent Slate . . . . .	2	6 by 2	0	

The slates called doubles are so called from the smallness of their size, and are made from the fragments of the larger qualities as they are sorted respectively.

The ladies are similarly obtained, being in pieces that will square up to the size of such a description of slate.

Countesses are still a gradation in dimension above ladies; and duchesses still larger. The slate is extracted from the quarries as other stony substances usually are, that is, by making perforations between its beds, into which gunpowder is placed and fused. This opens and divides the beds of the slate, which the quarry men remove in blocks of very considerable size. These blocks are afterwards split by having wedges of iron driven between their layers, which separate the blocks into scantling, of from four to nine inches in thickness, and as long and wide as may be required. Some of the scantling, which is intended to be exported as such, is sawn to the sizes ordered, that is, the edges only of such pieces; for it is not necessary to use the saw to the horizontal stratum of the slate, as that can be divided nearly as correct by the above means, without having recourse to such a tedious process as the sawing of it would be.

For the purpose of sawing the slate, the works in Wales are provided with abundance of beautiful machinery, some of which is put in motion by steam, and others by water, which keep in action a vast number of saws, all sawing the scantlings of slate into pieces adapted to their several purposes.

The imperial slating for roofs is uncommonly neat; it is known by having its lower edge sawn, whereas all the other slates used for covering are chipped square on their edges only.

The patent slate is so called among the slaters from the mode adopted to lay it on roofs, as no patent was ever obtained for such a mode of slating. It was first brought into use by Mr. Wyatt, the architect. It allows of being laid on a rafter of much less elevation than any other kind of slate, and is considerably lighter by reason of the laps being so much more inconsiderable than is found to be necessary for the common sort of slating. This slating was originally made from that description of slates known as Welsh Rags. The slaters now frequently make it of Imperials, which gives to it still less weight, and renders it somewhat more neat in its appearance than by the former mode.

Of the Westmoreland slate.—Experiments have been instituted on this description of covering, as we have seen, by the late bishop of Llandaff. ‘That sort of slate,’ says he, ‘other circumstances being the same, is esteemed the best

which imbibes the least water; for the imbibed water not only increases the weight of the covering, but in frosty weather, being converted into ice, it swells and shivers the slate. This effect of the frost is very sensible in tiled houses, but it is scarcely felt in slated ones, for good slate imbibes but little water; and when tiles are well glazed they are rendered in some measure, with respect to this point, similar to slate.’ He adds, ‘I took a piece of Westmoreland slate and a piece of common tile, and weighed each of them carefully; the surface of each was about thirty square inches; both the pieces were immersed in water for ten minutes, and then taken out and weighed as soon as they had ceased to drip, and it was found that the tile had imbibed about one-seventh part of its weight of water, and the slate had not imbibed  $\frac{2}{3}$  part of its weight. Indeed the wetting of the slate was merely superficial, while the tile in some measure became saturated with the water. I now placed both the wet pieces before the fire; in a quarter of an hour’s time the slate was become quite dry, and of the same weight it had before it was put into the water; but the tile had lost only about twelve grains of the water it had imbibed, which was, as near as could be expected, the same quantity which had been spread on its surface, for it was this quantity only which had been imbibed by the slate, the surface of which was equal to that of the tile. The tile was left to dry in a room heated to  $60^{\circ}$  of Fahrenheit, and it did not lose all the water it had imbibed in less than six days.’ He adds further, ‘that the finest sort of Westmoreland slate is sold at Kendal at 3s. 6d. per load, which will amount to £1 15s. per ton, the load weighing 2 cwt. The coarser sort may be had at 2s. 4d. a load, or £1 3s. 4d. per ton. Thirteen loads of the finest sort will cover forty-two square yards of roofing, and eighteen loads of the coarsest will cover the same quantity; so that there is half a ton less weight put upon forty-two square yards of roof, when the finest sort of slate is used, than if it was covered with the coarsest kind, and the difference of expense only 3s. 6d.’ It must be remarked that it owes its lightness not so much to any diversity in the component parts of the stone from which it is split, as to the thinness to which the workmen reduce it, and it is not so well calculated to resist violent winds as that which is heavier.

A common plain tile weighs thirty-seven ounces, and there are used, at a medium, 700 to cover a single square of roof of 100 superficial feet. A pan-tile weighs seventy-six ounces, or four pounds and three-quarters; and 180 are required to lay on a single square. Both the plain and pan-tiles are commonly bedded in mortar; indeed the former cannot be well laid on a roof without it. The mortar for the bedding of either will be equivalent to one-fourth of the weight of the tiles. When a roof is to be covered with copper, or lead, it will depend upon what number of ounces of the metal it is determined to assign to each superficial foot of such covering. But for common lead or copper covering, supposing seven pounds of the former to the foot, and sixteen ounces of the latter, the

following comparisons will suffice; taking a square of 100 feet superficial to be covered of each of the several materials, as all roofing is generally considered in such quantities, then it will be

	Cwt.	qrs.	lbs.
For Copper, per square . . . . .	0	3	16
Lead . . . . .	6	1	0
Fine slate . . . . .	6	0	21
Coarser do. . . . .	8	1	8
Plain-tiles . . . . .	18	0	0
Pan-tiles . . . . .	9	2	0

Hence may be seen what each square of a roof sustains, and a careful builder may select such a covering as his building may be best calculated to support. It will be noticed, too, how much the tiles exceed in their weight that of the other coverings. The pan-tile herein weighed was at the time perfectly dry, and is of the common sort made in and about London. The plain tile is taken at the weight assigned it in the learned prelate's paper before referred to. The pan-tile is equally adapted to imbibe water with the plain tile, hence a somewhat greater weight than is here taken may be supposed to be generally operating upon the roof, when loaded with such a covering.

All the several kinds before named partake of a similar mode, in as far as refers to the bonding or lap of one portion of the slate over another. The lap of each joint is generally equal to one-third of the length of the slate, and the slater selects all the largest in size, of the description about to be used, to be put on nearest the eaves of the roof. When the slates are brought from the quarry, they are not found in so square a shape as to be immediately fit to be put on a roof, but are prepared for that purpose by cutting and sorting. The slater, to effect this, picks and examines the slate, observing which is its strongest and squarest end. He then, by holding the slate a little slanting upon and projecting about an inch over the edge of a small block of wood, seating himself at the same time on something which is equal to it in height, begins and cuts away straight one of its edges. He then, with a slip of wood, gauges the other edge parallel to the same, and cuts off that also; after which he turns it round and squares the end. The slate is so far prepared, excepting it be the turning of his tool round and pecking through it, on its opposite end, two small holes, which are made for the nails to enter when he lays it on the roof. All the quarry slates require this preparation from the workman known as the slater. All slates are put on with nails or screws, and two are assigned to each slate at least. The copper and zinc nails are esteemed the best, by reason of their not being so susceptible of oxidation as the iron ones. The slaters, however, to prevent the destruction of their iron nails, have recourse to painting them; this they do by putting them in a tub containing white lead, rendered very fluid by excess of saturation with oil, and stirring them up and about till they are completely covered over, after which they are removed and spread out upon boards and left to dry. Since the general developments of chemistry, some of the

slaters have succeeded in plating over their iron nails with tin; but great address is necessary to succeed well at it; however, tinned nails are becoming more common, and will be found greatly cheaper than copper ones. The previous preparation necessary for laying slates on roofs, consists in forming a base or floor for the slates to lie compactly and safely upon. For the doubles and ladies, boarding is essential, if it be expected to have a good water-proof covering to the roof. All that is required in the boarding for such slates is, that it be laid very even and the joints close, securing the boards by properly nailing them down on the rafters. When the boarding is ready, the slater examines it, and provides himself with several slips of wood, called tilting fillets. A tilting fillet is made about two inches and a half wide, three-quarters of an inch thick on one edge, and chamfered away to an arris on the other edge. These fillets he carefully lays and nails down all round the extreme edges of the roof to be slated, beginning with the hips if there be any, and, if not, with the sides, eaves, and ridge. When these are all done, he prepares for laying the slates, and begins the eaves first. For these he picks out all the largest slates, which he places regularly throughout, setting their lower edges to a line, and, when so placed, he secures them by nailing them down to the boarding. He then selects such slates as will form the bond to the under sides of the eaves. This part of the work consists in placing another row of slates under those which he has previously laid, so as to cross and cover all their joints; such slates are pushed up lightly under those which are above them, and are seldom nailed, but left dependent for their support on the weight of those above them, and their own weight on the boarding. The countesses, and all the other description of slates, when intended to be laid in a good manner, are also laid on boards. When the slater has finished the eaves, he strains a line on the face of its upper slates parallel to its outer edge, and as far from it as he deems sufficient for the lap of those slates which he intends to go on to form the next course; this course of slates being laid and nailed even with the line, and crossing the joints of the upper slates of the eaves. This lining and laying of the slates is continued till the slater gets up close to the ridge of the roof, he observing throughout to cross the different joints by the slates he lays on one above another. This is the method uniformly followed in laying all the different kinds of slates, excepting it be those which are called the patent slates, which will henceforth be explained. All the larger kinds of slate are found to lie firmly on what are called battens, in consequence of which they are frequently made use of, from their promoting a saving in the expense, which will on an average amount to about 20s. per square. A batten consists of a narrow portion of deal-wood about two and a half, or three inches wide: there are commonly three taken out flat-wise of a deal. When countesses are to be laid on, battens three quarters of an inch in thickness will be an adequate substance for them; but, for the larger and heavier kind of slates, inch battens will be

necessary. When a roof is to be battened for slates, the slater himself is the best person to fix them, as they are not placed at a uniform distance from each other, but so as to suit the length of the slates, and, as these vary as they approach the apex or ridge of the roof, it follows that the slater himself becomes the best judge where to fix the batten to best support the slates intended to lie on it. When they have been fixed by the carpenters he almost always finds it necessary to take them up and re-lay them. The nails used by slaters, as before observed, are of iron, copper, and zinc. They are of the description called clout-nails. A clout-nail consists in being made round on its shank, or driving part, with a large round and flat head. Clout-nails are made of several qualities, but those used by the slater are about an inch and a quarter long in the shank, and are termed eight-penny nails. The copper nails are considerably dearer than those of iron, or zinc, hence slating done by them is charged somewhat more per square.

The patent slating, as it is called, consists in selecting the largest slates, and those also of uniformity in their thickness.—The slates called imperials are those now taken for it. A roof, to be covered with this kind of slate, requires that its common rafters be left loose upon their purlings, as they must be placed so as to suit the widths of the slates, it being necessary to have a rafter under every one of their meeting joints.—Neither battening nor boarding is required for these slates, and the quantity of rafters will depend on the widths of the slates; hence if they are of a large size very few will be required, and of course a great saving in the timber will take place, besides giving a much less weight in the roof. The work of covering by this kind of slate is commenced as before at the eaves, but no crossing or bonding is wanted, the slates being uniformly laid, with the end of each reaching to the centres of each of the rafters, and are all butted up to one another throughout the length of the roof; the rafters being so placed as to come regularly under the ends of two of the slates. When the eave's course is laid, the slates composing it are all screwed down by two or three strong inch-and-a-half screws at each of their ends into the rafters under them. A line is afterwards strained about two inches from their upper edge, this being allowed as a lap for the course of slates which goes on above, the edges of which course being fixed straight with the line, and this lining laying with a lap and screwing down is continued till the roof is finally covered all over.—After which the filleting is to commence; this consists in covering all the meeting joints of the slates which come on the rafters with fillets of slate bedded in glazier's putty, and screwing them down through the whole into the rafters under them.—The fillets, to cover these kind of joints, are usually made about three inches wide, and as long as the slate they are intended to cover. They are solidly bedded in the putty, their joints lapped as are those of the slates; one screw is put in each lap, and one in the middle of the fillet; these fillets, are after being so laid, bedded and screwed down, pointed neatly up all

round their edges with more putty, and are painted over with a paint resembling the color of the slate, and hence the work is deemed to be finished.—The hips and ridges of such slating are frequently covered by fillets in a similar way, and have a very neat effect. But lead is the best covering for all hips and ridges of roofs, and it is not greatly dearer than covering them by this mode. Slating is done also in several other ways, but the principles before explained embrace the most of them; some workmen have shaped and laid their slates in a lozenge form. This kind of work consists in getting all the slates to a uniform size, and into the shape of a geometrical square; they are, when laying on the roof (which it is always necessary to have boarded for this work), bonded and lapped as the common slating is; observing only to exactly let the elbow or half of the square appear above each slate which is under it, and to be regular in the courses all over the roof. One nail or screw only can be used for such slating, hence it soon becomes dilapidated. It is commonly employed in places near to the eye, or where particular neatness is required.—The patent slating may be laid so as to be perfectly watertight, with an elevation of the rafter considerably less than any other slate or tile covering; a rise of two inches in each foot to the length of the rafter is deemed an adequate rise for this covering, and this, for a rafter of fifteen feet, would be only two feet six inches, a rise in the pitch of a roof which at any height from the ground would be hardly to be perceived.

*Of slater's tools.*—They consist of a few only, and these are sometimes found by the master and sometimes by the men. The tool called the saixe is composed of tempered iron, about sixteen inches in length and two inches in width, somewhat bent at one end, and prepared for, and handled with beechen wood at the other.—This instrument is not unlike a large knife, except its having on its back a piece of iron, projecting about three inches from out of it, and drawn sharp to a point. With this tool, when ground sharp, the slater chips or cuts all his slates to the sizes he requires them for all the various purposes of his business. He has also a ripper, as he calls it; this tool is formed of iron about the same length as the saixe; it is very thin in its blade part, which is one inch and three-quarters wide, tapered somewhat towards its top, where it has a round head projecting over the blade on each side about half an inch, and having also two little round notches in the two internal angles at the intersection of the one with the other. There is a shoulder formed at the handle end of this tool, which raises it up above the blade, and which enables the workman to hold it firmly in his hand when in use. The use of this tool is in repairs of old slating, as, by forcing its blade up under the slates, the projecting head catches the nail of the slate, which enters into the little notch at its intersection, and which enables the workman to pull it out, and which also at the same time loosens the slate, and allows him to take it away and insert another in its place, this is the principal use of the ripper, viz. the repairing of the old slating.

The hammer of the slater is somewhat different in shape from the common tool of that description; it is on the hammer, or driving part, about five inches in height, bent on the top a little back, and ground to a tolerable sharp point, its lower or flat end being about three-quarters of an inch in diameter, and quite round. On the side of the driving part is a small projection, made with a notch in its centre, and which is used as a claw to draw or extract the nails, when nailing down the slates which do not drive satisfactorily. This kind of hammer is of great utility to the slater, and enables him to get through his new work with the greatest address. The tool called the shaving-tool is used for the purpose of getting the slates to a smooth face when so wanted, for skirtings, floors of balconies, or any other purpose to which slate may be required with a smooth face. It consists of a blade of iron, sharpened at one of its ends like a chisel, and is mortised through the centre of two round wooden handles, one of which is fixed at one end, and the other about the middle of the blade. The blade is about eleven inches long, and two inches wide, the handles to which are about ten inches long, so that they project four inches over on each side of the blade. The workman, in using this tool, takes it in both his hands, placing one hand to each side of the handle which is in the middle of the blade, allowing the other to come up and press against the wrists of both his arms, and in this way he works away all the uneven parts from off the surface of the slate, and gets it to a smooth face. This tool is well calculated for what it has to do, but it is a very uneasy kind of instrument to the workman, its whole purchase in its operation upon the slate being against his wrists, and which is sometimes attended with so much pain that he is obliged to give over his work. To avoid this inconvenience, he often puts flannel and other things over the handle which lies against his wrists; still a day or two's work, with this tool, will lame an inexperienced workman. The slater's other working tools consist of numerous chisels and gouges, together with files of all sizes, with which he finishes his slates for the better parts of his work into mouldings, and other forms, required for the different uses to which slate is applied.

The strength of slate is very great in comparison of any kind of freestone, as it is ascertained that a slate of one inch in thickness will support in an horizontal position as much in weight as five inches of Portland similarly suspended. Hence slates are now wrought and used for galleries and other purposes where strength and lightness combined are essential.

Slates are also fashioned into chimney-pieces, partaking of the different varieties of labor applied to marble; but it is incapable like it of receiving a polish, in consequence of which it will not get greatly into use for that purpose. It makes excellent skirtings of all descriptions, as well as casings to walls where dilapidations or great wear and tear is to be anticipated. It is capable of being fixed for these purposes with joints equally neat with wood, and may be

painted over if required, to appear like it. Staircases may be executed in slate, and will have an effect not unlike to black marble. The writer of this article has had a double gallery staircase leading to a suite of baths constructed of it, the effect of which was so good as by strangers to be generally taken and considered to be made of marble. Messrs. Warmsley and Milton, of Lambeth, are among the best slaters in London when slaters' work is required to be done on a large scale, or when any of the better departments of the working of slates are required, as they keep people competent to work it up into almost every shape, and with a neatness equaling works in marble.

Slaters' work is measured by the surveyor's as most artificers' work now usually is, and is afterwards reduced into squares, each square containing 100 feet superficial.

Slaters are allowed, in addition to the nett dimensions of their work (when taking the measure of roofs) six inches for all the eaves and four inches for the hips; this allowance is made in consequence of the slates being used double in the former case, and for the waste in cutting away the sides of the slates to fit into the latter. Some of these eaves, for instance, when rags or imperial slates are used, require an addition of nine inches to be allowed for the eaves, such kind of slates being so much larger than the size of most of the other kinds of slate now in use. All faced work in slate skirtings, staircases, galleries, &c., is charged by the foot superficial, admeasuring it without any kind of addition. The chimney pieces are made up and sold at per piece, as is done by the masons. Slating by the square to roofing varies as the size or quality of the slate made use of, beginning, for instance, with the doubles at about two guineas, countesses, &c., two guineas and a half. Welsh rags and imperials at three guineas and a half, and Westmoreland, the dearest of all, at four guineas and a half per square. The present prices of slaters' work, done in a good and workmanlike manner, will be found to be equal to the above charges. Galleries and other slates worked up for such kind of purposes, and fixed complete, will vary as the mouldings about them do from 4s. 6d. to 5s. 6d. per foot superficial. Skirtings and linings of slate with one face only worked, but squared and fixed up, from 1s. 6d. to 2s. per foot superficial. From these data, a tolerably correct idea may be formed of the value of any kind of slating which may be wanting, and a comparison may be made of its value with the several other coverings, &c., employed in buildings.

**SLATTERN,** *n. s.* Swedish *slaetti*. See **SLUT.** A woman negligent or dirty; not elegant or nice.

Without the raising of which sum,  
You dare not be so troublesome  
To pinch the *slatterns* black and blue,  
For leaving you their work to do. *Hudibras.*

The sallow skin is for the swarthy put,  
And love can make a *slattern* of a slut. *Dryden.*

We may always observe that a gossip in politicks  
is a *slattern* in her family. *Addison's Freeloader.*

Beneath the lamp her tawdry ribbands glare,  
The new-scoured manteau, and the *slattern* hair.

*Gay.*

**SLAVE, n. s. & v. n.** Fr. *esclave*; Teut. *sla'vēri*, n. s. | *slav*; Belgic *slauf*.  
**SLA'VISH, adj.** Said to have its origin from the Slavi or  
**SLA'VISHLY, adv.** Selavonians, subdued and sold by the Venetians. One mancipitated to a master; not a freeman; a dependant: the state of a slave: the derivatives corresponding.

Thou elvish markt, abortive, rooting hog!  
Thou that wast sealed in thy nativity  
The *slave* of nature, and the son of hell.

*Shakespeare. Richard III.*

You have among you many a purchased *slave*,  
Which, like your asses, and your dogs and mules,  
You use in abject and in *slavish* part,  
Because you bought them. *Id. Merchant of Venice.*

If my dissentings were out of error, weakness, or obstinacy, yet no man can think it other than the badge of *slavery*, by savage rudeness and importunate obtrusions of violence to have the mist of his error dispelled.

*King Charles.*

Those are the labour'd births of *slavish* brains: Not the effect of poetry, but pains. *Denham.*

When once men are immersed in sensual things, and are become *slaves* to their passions and lusts, then are they most disposed to doubt of the existence of God. *Wilkins.*

Of guests we make them *slaves* Milton.

Inhospitably. The supreme God, t' whom all things ill Are but as *slavish* officers of vengeance, Would send a glist'ring guardian, if need were, To keep my life and honour unassailed. *Milton.*

*Slaves* to our passions we become, and then It grows impossible to govern men. *Waller.*

Perspective a painter must not want; yet without subjecting ourselves so wholly to it as to become slaves of it. *Dryden.*

Power shall not exempt the kings of the earth, and the great men, neither shall meanness excuse the poorest *slave*. *Nelson.*

The condition of servants was different from what it is now, they being generally *slaves*, and such as were bought and sold for money. *South.*

To-morrow, should we thus express our friendship, Each might receive a *slave* into his arms: This sun perhaps, this morning sun, 's the last That e'er shall rise on Roman liberty.

*Addison's Cato.*

*Slavish* bards our mutual loves rehearse In lying strains and ignominious verse. *Prior.*  
Had women been the makers of our laws, The men should *slave* at cards from morn to night. *Swift.*

Husband, husband, cease your strife, Nor longer idly rave, sir; Though I am your wedded wife, Yet I am not your *slave*, sir. *Burns.*

**SLAVE COAST**, a country of Africa adjoining to the Gold Coast and Ivory Coast, and situated between these and Benin. In politics, religion, customs, and manners, the natives greatly resemble those of the Gold Coast. In this country Europeans long had the greatest number of forts and factories for carrying on the disgraceful and inhuman traffic whence the country is named. By means of the negro factors this trade was carried on above 700 miles back in the inland country, whereby great numbers of slaves were

procured, as well as by means of wars amongst the negroes, fomented by Europeans.

**SLAVE LAKE**, a very extensive lake in the north-west part of North America, above 200 miles long, and about twelve broad. Its north bay is forty leagues broad, and six fathoms deep. The Dog-ribbed Indians inhabit the country on its north coast. It has an outlet called Mackenzie's River, which runs into the Frozen Ocean. The centre of this lake lies in about long.  $115^{\circ} 0' W.$ , lat.  $61^{\circ} 26' N.$

**SLAVE RIVER**, a river of North America, which rises from Lake Athapesco, runs a course north-west by west, and falls into Mackenzie's River by a mouth one mile broad.

**SLAVE TRADE.** The history of this enormous iniquity is happily now no longer connected with that of our own country: but that iniquity extensively exists, and it is said that our withdrawal from the trade has very little diminished its extent, and rather increased than lessened its horrors. A sketch of its history will therefore still be appropriate, and may be useful; we shall close with that of its *abolition* in this country.

The Portuguese were the first Europeans that settled on the coast of Western Africa. The unfortunate Africans fled, and sought in the interior a retreat from the persecution of their invaders; but the Portuguese pursued them: entered their rivers, sailed up into the heart of the country, surprised the natives in their recesses, and carried them into slavery. The next step, which the Europeans found it necessary to take, was that of securing themselves fortified posts; of changing their system of force into that of pretended liberality; and of opening, by bribery and corruption, a communication with the native authorities. In the year 1481 the Portuguese erected their first fort at D'Elmina, about forty years after Alonzo Gonzales had pointed out the southern Africans as articles of commerce. The scheme succeeded: a permanent intercourse took place between the Europeans and Africans; and at length treaties of peace and commerce were concluded; in which it was agreed that the kings, on their part, should, from this period, sentence prisoners of war and convicts to European servitude; and that the Europeans should supply them, in return, with their luxuries. This laid the foundation of that commerce of which we are now to give a brief history.

One ostensible reason that was alleged for introducing Africans, in particular, as laborers into America and the West Indies, and placing them under European masters, was the hypocritical one of converting the heathen. It was very soon found, however, that usage utterly different from that which Christianity would have dictated was necessary, where people were transported by thousands, and made to labor against their will. A system, therefore, of cruel severity sprung up; so that when in after times the situation of master and slave came to be viewed, as it existed in practice between the two, the masters seemed to have attained the rank of deities or demons, and the slaves to have gone down to that of brutes. Hence, very early after the commence-

ment of the slave trade, the objects of it began to be considered as an inferior species, and their color as a mark of it: under this latter notion they continued to be transported for years, till different persons, taking an interest in their sufferings, produced such a union of public sentiment in their favor, in England, that the parliament was obliged, as it were, to consider their case, by hearing evidence upon it. From this evidence may be gleaned the best account of the trade upon which we are writing.

The agreements to which we have referred, as stipulating to supply Europeans with African captives and convicts, were not sufficient for the demand. Wars were made, therefore, not as formerly, from motives of retaliation and defence, but for the sake of obtaining prisoners alone. When a European ship came in sight, it was considered as a motive for war, and a signal for hostilities: the despotic sovereigns, influenced by venal motives alone, first made war upon the neighbouring tribes, in the violation of every principle of justice; and, if they did not thus succeed in their main object, they turned their arms against their own subjects. The first villages at which they arrived were surrounded and set on fire; and the wretched inhabitants scized as they were escaping. These, consisting of whole families, fathers, brothers, husbands, wives, and children, were instantly driven in chains to the merchants. Many other persons were kidnapped, in order to glut the avarice of their own countrymen, who lay in wait for them; and they were afterwards sold to the Europeans, while the seamen of the ships, by every possible artifice, enticed others on board, and transported them into slavery.

Collectors of slaves were at length distributed into several classes. The first consisted of such black traders as preserved a regular chain of traffic, and a regular communication with each other, from the interior parts of the country to the sea-shore. Many of the slaves, thus driven down, are reported to have travelled at least 1200 miles from the place where they were first purchased. A pistol or a sword may have been the full value of one of these slaves, at the first cost; but his price advances as he travels towards the sea-shore. The second class of slave traders is composed of such as travel inland, but have no chain of commerce or communication with the shore. At a certain distance they strike off in a line parallel to the shore, and, visiting the fairs and villages in their way, drop down occasionally to the coast, as they have procured slaves. The third class consists of such as travel by water up the great rivers, in their canoes, which are very long, well-armed, and carry from fifty to seventy hands. These often proceed to the distance of 1000 miles, and bring down from sixty to 120 slaves at a time. The fourth class includes those who, living near the banks of the rivers or the sea-shore, scarcely travel at all, but coming by some means or other into the possession of slaves, either drive them, or send them immediately to the ships and factories. Most of the traders now described traffic on their own account; but there are some of the poorer sort who travel for the ships. The dif-

ferent sorts of goods with which the traders deal for slaves, in the inland country, may be divided into three sorts, viz. East Indian, home-made or colonial, and Venetian. The first consists of cowries, or small shells, which pass for money on some parts of the coast; blue and white biffs, romals, bandanoes, and other cloths and productions of the East. The second consists of bariron, muskets, powder, swords, pans, and other hardware; cottons, linen, spirits in great abundance, with other articles of less note. The third consists totally of beads. Almost every ship carries the three sorts of articles now stated, but more or less of one than of the other, according to the place of her destination; every different part of the coast requiring a different assortment, and the Africans, like the Europeans, repeatedly changing their taste. This is particularly the case with respect to beads. The same kind of beads which finds a market one year in one part of the coast, will probably not be saleable there the next. At one time the green are preferred to the yellow, at another the opaque to the transparent, and at another the oval to the round.

The slave trade may be said to have begun at the great river Senegal, and to have extended to the farther limits of Angola, a distance of many thousand miles. On the Senegal and Gambia, Europeans proceeded in their ships till they came to a proper station, and then sent out their boats armed to different villages; on their approach they fired a musket, or beat a drum, to apprise the inhabitants that they were in want of slaves, when country people supplied them in part, and they also procured them from the large canoes above-mentioned.

Captains Hills and Wilson, and Mr. Wadstrom, and lieutenant Dalrymple, inform us that the kings in this part of the country do not hesitate to make war upon their own subjects, when in want of money. They send out their soldiers in the night, who lying before, or attacking or burning a village, seize such as come out of it, and return with them as slaves. On the river Sierra Leonia there were several private factories, belonging to the merchants of Europe, in which their agents, being white people, resided. These agents kept a number of boats, which were sent up the river for slaves; and thus they procured for the factories a regular supply.

On the Windward Coast, the natives, when they have any slaves to sell, generally signify it by fires. Practices similar to those already recited prevail from the river Gambia to the end of the Windward Coast. Lieutenant Storey says that public robbery is here called war. Mr. Bowman, another evidence, says that when parties of robbers were setting fire to villages war was said to be carrying on. This account is confirmed by Mr. Town and Sir George Young, and all of them concur in stating that these parties go out at night, break up villages, and carry off the inhabitants as slaves. Messrs. Town, Bowman, and Story, have seen them set out upon such expeditions; and the latter, to satisfy himself, accompanied them on one occasion. These came to a town in the dead of the night, set fire to it, and took away many of the inhab-

bitant. The above practice is so common that both up the river Scassus, Sierra Leon, and Junk, and at Cape Mount and Bassau, the remains of burnt and deserted villages are to be seen, on which such attacks have been made, and that the natives are found to be constantly armed. In one of the towns two or three houses only are described to have been left standing, and two plantations of rice, which were ready for cutting down, but which the inhabitants, by being carried off, had been deprived of enjoying. Lieutenant Simpson, of the royal marines, another evidence, understood that the villages on the Windward Coast were always at war; and the reason given was that the kings were in want of slaves. Mr. Morley, another evidence, speaks in the same language. Slaves, he says, are generally made by robbers going from village to village in the night.

The Gold Coast, which is next to the Windward Coast, long presented the same melancholy scene. The Rev. Mr. Quakoo, who had resided as chaplain to one of the factories there for many years, informed lieutenant Simpson that wars were often made for the sole purpose of making slaves. Dr. Trotter says, by prisoners of war, the traders mean such as are carried off by robbers, who ravage the country for that purpose; the Bush-men making war to make trade, being a common way of speaking among them; and, in a large cargo of slaves, he could only recollect three who had not been so obtained. Surgeon Falconbridge defines the term war, when used by the slave-dealers on this part of the coast, to mean a piratical expedition for making slaves. Mr. Morley says, what they call war is putting the villages in confusion, and catching the inhabitants, whom they carry down to the coast and sell, where, it is well known, no questions are asked how they had been obtained. Indeed a slave-captain, when examined by the house of commons, acknowledged that he believed a captain would be reckoned a fool by any trading man to whom he should put such a question. And Mr. Marsh, the resident at Cape Coast castle, told Mr. How that he did not care how the slaves he purchased had been obtained; and showed him instruments which were put into the slaves' mouths, to prevent their crying out for assistance, while the robbers were conveying them through the country. From the end of the Gold Coast to the extremity of Angola, which is the boundary of the slave trade, and which vast district comprehends many navigable rivers, a repetition of the same atrocious practices has been traced. Here, as before, going to towns in the night, setting them on fire, and seizing the people, or putting the villages in confusion, and catching the inhabitants, are called war. These piratical expeditions are frequently made by water in these parts. Mr. Douglas says, when a slave ship arrives, the king sends his war-canoes up the river, where they surprise and seize all they can. Surgeon Falconbridge, Mr. Morley, and Mr. Isaac Parker, confirm the account. Up the great rivers Bonny and Calabar the king sends fleets of canoes, with armed men, which return with slaves. Mr. I. Parker was twice up the river Calabar in one of these

fleets, and perhaps the only white person who was ever permitted to go with them. In the day time, he says, when they approached a village, they lay under the bushes; but at night flew up to it, and seized every one they could catch. In this way they proceeded up the river, till they had gotten forty-five persons, which they brought back to New Town, and sold to the European ships. About a fortnight afterwards he was allowed to accompany them on another expedition. Here, he says, they plundered other villages higher up the river than before, taking men, women, and children, as they could catch them in their huts. They seized on much the same number, and brought them to New Town, as before.

A vessel seeking slaves, on the Gold Coast, generally anchors at Annamaboe. A certain quantity of gold must be included in the articles designed for purchasing slaves, or else none can be obtained. At Whidah, Bonny, Calabar, Benin, and Angola, gold is not demanded in exchange; and boats are unnecessary, except for reaching the shore, wooding and watering, and services of a similar kind. This is particularly the case at Calabar and Bonny, which have been the greatest markets for slaves. The traders of the first class, after an absence of about nine days, have returned frequently with 1500 or 2000 slaves at a time. The number of slaves that have been annually transported from this part of Africa has fluctuated according to circumstances. In the year 1768 104,000 natives of Africa are supposed to have been taken from their own continent; and it continued much the same for the next five years. During the American war it was diminished. In the year 1786 the numbers may be stated at 100,000, and the ships that conveyed them to the colonies at 350. The trade, before the abolition, was confined to the English, Dutch, Danes, Portuguese, and French. England, in 1786, employed 130 ships, and carried off about 42,000 slaves. These were fitted out from the ports of London, Bristol, and Liverpool; the latter of which alone sent out ninety vessels.

When the number of slaves was completed, the ships weighed anchor, and began what is termed the Middle passage, to carry them to their respective colonies. The vessels in which they were transported were of different dimensions, from 11 to 800 tons, and they carried from 30 to 1500 slaves. The height of the apartments was different, according to the size of the vessel, but may be stated to be from six feet to less than three; so that it was impossible to stand erect in most of the vessels, and in some scarcely to sit down in the same posture.

When the vessel was full, their situation was truly pitiable. A grown-up person was allowed, in the best regulated ships, but sixteen English inches each in width, two (English) feet eight inches in height, and five feet eleven inches in length; or, as surgeon Falconbridge expresses himself, not so much room as a man has in his coffin. Surgeon Wilson describes the slaves as much crowded below. He generally took off his shoes before he went down among them, and was obliged to be very cautious how he walked,

lest he should tread upon them. Captain Knox admits that they had not room to lie on their backs. It also appears that, if they are the least dilatory or reluctant in packing themselves, they were quickened by the application of the whip. Dr. Trotter says they were so crowded below that it was impossible to walk through them without treading on them; and also that it was the first mate's duty to see them stowed or packed together. Those who did not get quickly into their places were compelled by a 'cat-o'-nine-tails. But now their situation became too wretched to be described. No language has words to explain it properly. Captain Hall has often heard them cry out from below for want of air. The space between decks was so hot that often, after he has been there but a few minutes among them, he found his shirt so wetted by perspiration that he could have wrung it. Mr. Ellison says that the steam from their confined bodies below came up through the gratings like a furnace. Surgeon Wilson has often heard them complain of heat. The bad effects, which resulted from this and their confinement, were weakness and fainting. He has seen some die a few minutes after being brought up, which proceeded from corrupted air and heat jointly. He has seen others go down apparently well at night, and found them dead in the morning. He had a hospital on board; but the sick slaves were obliged to lie on the bare boards, so that the motion of the vessel often occasioned excoriations from the prominent parts of their bodies. Surgeon Falconbridge declares that he has known slaves go down apparently in health, and brought up dead in the morning. He once opened one of them surgically, to discover with certainty what was the cause of his death; and found, from the appearance of the thorax and abdomen, that it was suffocation. He says that once, on going below, he found that twenty of the slaves had fainted. He got them instantly hauled up on deck; but, notwithstanding the quickness of his movements on this occasion, two or three of them died. And once, though he was only fifteen minutes in their room below, he became so ill himself that he could not get up again to the deck without help; and he never was below many minutes together but his shirt was as wet as if it had been dipped in water. He says also, that as the slaves, whether well or ill, always lie on the bare planks, the motion of the ship rubs the flesh from the prominent parts of their body, and leaves the bones almost bare. And when the slaves have the flux, which is frequently the case, the whole place becomes covered with blood and mucus, like a slaughter-house; and, as they are fettered and wedged close together, the utmost disorder arises from endeavours to get to three or four tubs, which are placed among them for necessary purposes: this disorder is still farther increased, by the healthy being not unfrequently chained to the diseased, the dying, and the dead. Dr. Trotter, speaking on the same subject, gives us an equally melancholy account. When the scuttles, says he, in the ship's sides, are obliged to be shut in bad weather, the gratings are not sufficient for airing the rooms. He never himself could breathe freely below,

unless immediately under the hatchway. He has seen the slaves drawing their breath with all that laborious and anxious effort for life which is observed in expiring animals, subjected by experiment to foul air, or in the exhausted receiver of an air-pump. He has also seen them, when the tarpaulings have been thrown over the gratings, attempting to heave them up, crying out, in their own language, kickeraboo, kickeraboo, that is, 'We are dying.' Most of them have been recovered by being brought upon deck; but some have perished, and this entirely by suffocation, as they had no previous signs of indisposition. The slaves, after having been stowed, soon began to experience the effects that might be naturally expected from their situation. The pestilential breath of many in so confined a state rendered them sickly, and the vicissitude of heat and cold generated a flux. Several would die, and others were induced to destroy themselves, or to revenge themselves on their oppressors.

The ships, having completed the middle passage, anchored in their destined ports; and the unhappy Africans, now on board, were prepared for sale. Some were consigned to brokers; with this view they were examined by laborers, who wanted them for their farms; and, in the selection of them, friends and relations were parted without any consideration; when they parted with mutual embraces, they were often severed by a lash. Another mode of sale was by vendue; in which case they were carried to a tavern, or other public place, where, being put up to sale, they became the property of the highest bidder. Such as were in a sick and emaciated state were generally sold for a few dollars. The third mode of selling them was by the 'scramble.' In this case the main and quarter-decks of the ship were darkened by sails: the slaves were brought out of the hold and made to stand in the darkened area: when the purchasers, furnished with long ropes, rushed, as soon as the signal was given, within the awning, and endeavoured to encircle as many of them as they could. These scrambles were also frequently made on the shore: these unhappy objects being shut up in an apartment, or court-yard, the doors of which were thrown open, when the purchasers rushed in, with their ropes in their hands, as before described.

We come now to the far more agreeable part of our subject, *the history of the abolition* of this cruel traffic in this country and its dependencies. Mr. Thomas Clarkson, a gentleman still living, has published an account of the different measures pursued to promote this great object. These were registered at the time, either by himself, or the estimable committee which acted in concert with him; and his history, in two volumes octavo has been several years before the public; we cannot therefore, we conceive, hand down information on this topic better than by a concise abridgment of his valuable testimony.

From the beginning of this infamous traffic, to the time when our author became a public actor in the scene of its suppression, in the year 1787, there had not been wanting good men to lift up their voices against it: and as the sentiments of these, who were most of them authors, had been given to the public for a long succession of years,

hundreds of persons had been taught in England to condemn it. These, that is, the good men just alluded to, Mr. Clarkson considers as so many necessary forerunners (indeed he gives them that title); and considers them also, though most of them lived before his own time, as so many coadjutors in the work.

Having spoken first of the men in power, Mr. Clarkson divides the forerunners who walked in humbler life into four classes. The first consists of persons in England, poets and others, who bore their testimony against the trade in their successive writings up to the year 1787. Among the poets were Pope, Thomson, Shenstone, and Cowper; among the divines, bishop Warburton, Richard Baxter, Beattie, Wesley, Whitfield, Wakefield, and Paley; among the others were Montesquieu, Hutchinson, Wallis, Burke, Postlethwaite, Day, Hartley, Millar, and Granville Sharp. The latter, however, is to be particularly distinguished from the rest; for, whereas the others had only handed down the traffic in question as infamous, by the mention made of it in their respective works, this good man spent whole years in bringing the cruelty and wickedness of it into public notice. He tried, at his own expense, the famous case of Somerset, and several others, in our courts of law. He was, in fact, the first laborer in the cause. He began to be the public advocate of the oppressed Africans in 1765, and was waiting for opportunities for further exertion in 1787, the particular epoch before mentioned. See our article **SHARE, GRANVILLE.**

The second class consists of the Quakers in England. This estimable society passed a public censure upon the traffic at their yearly meeting in London, in 1727. This they followed up by other resolutions as a body, in 1758, 1761, 1763, and 1772, when they had become principally against it as against a crime of the deepest dye. In 1783 they petitioned parliament against its continuance. In this year certain members of the society thought it their duty to make their fellow countrymen at large acquainted with the horrible nature of it: these were Thomas Knowles, George Harrison, Samuel Hoare, John Lloyd, Joseph Woods, and William Dillwyn. They formed themselves into a committee in London for this purpose; they wrote and circulated books; they conveyed also information on the subject through the London and country newspapers. It was not known, however, from whom the information came, as their names were concealed from the public. In this manner they continued to work their way from 1783 to 1787.

The third class of Mr. Clarkson is formed of the Quakers and others in North America. The Quakers there entertained the same opinion as their brethren in England on this subject. In 1696 and in 1711 they condemned, as a religious body, this cruel traffic; and in 1754, 1755, 1774, 1776, and 1778, they not only passed resolutions against it, as far as their own members were concerned, but also against slavery itself. In process of time, however, individuals rose up out of this benevolent body, and became public laborers in the cause of the unhappy Africans. The two principal of these were John Woolman and Anthony Benezet. The former travelled many

hundred miles on foot, to converse with planters and others, on the iniquity of holding their fellow creatures in bondage; and the latter labored for years in collecting information concerning Africa and the slave trade, and in handing it to the world. At this time other people, of other religious denominations, came forward in North America, and contributed to increase the odium which the Quakers had been the first to excite there against the traffic; when, in 1774, James Pemberton, a pious Quaker in Pennsylvania, and Dr. Rush, an eminent physician, and a man of weight among the Presbyterians in the same province, formed a committee, in which persons of different religious sects joined for the purpose of abolishing both the slave trade and slavery on their own continent. This committee was obliged to suspend its operations during the war with Great Britain, but afterwards resumed its functions. In 1787 it added considerably to its numbers, and took in, among others, the celebrated Dr. Franklin, who was its first president in its renovated state.

It will be proper here to stop and interrupt the thread of the history. It has appeared, from what has been said above, first, that Mr. Granville Sharp, the most conspicuous member of the first of the classes now mentioned, was alive in 1787, and then waiting for an opportunity of exerting himself farther in behalf of the injured Africans; secondly, that of the second class William Dillwyn was one of the committee for the same object in the same year; and, thirdly, that James Pemberton was also alive in the same year, and a very conspicuous member of the third. It happened that William Dillwyn, who had been born and long resident in America, had been in habits of intimate friendship with Pemberton; and that in consequence of his acquaintance also with the venerable Anthony Benezet, he had been introduced, by means of a letter from him, upon coming to England, to Mr. Granville Sharp. Here then we find that a member of the second class was accidentally known to a member of the first, and also to a member of the third: and thus we see how easily Dillwyn became a medium through whom the members of all the classes might be easily united.

We come now to the fourth class of forerunners. The first in this class was Dr. Peckard, master of Magdalen College, in the University of Cambridge. This gentleman had not only censured the slave trade in the severest manner, in a sermon preached before the university itself; but when he became vice-chancellor of it, in 1785, he gave out the following subject for one of the bachelors' prizes, 'Anne licet invitio servitutem dare?' or, 'Is it right to make slaves of others against their will?' At this time Mr. Clarkson had obtained the bachelor's prize of the former year, and determined to become a candidate for that of the present. He took prodigious pains to make himself master of the subject, as far as the time would allow, both by procuring proper books, and by seeing as many persons as he could of those who had been in Africa, and who had become in any degree acquainted with the nature of the slave trade.

Having thus gained a considerable stock of information, he wrote his Latin Essay, and, having sent it in to the vice-chancellor, soon found himself honored with the first prize. After this, being then in London, he went down to Cambridge at the time of the commencement, in order to read it publicly, as is usual, in the senate-house. The next day he returned towards London: he was then on horseback; but while upon the road the subject of the essay entirely engrossed his thoughts; he became at times seriously affected as he travelled on. He once stopped his horse, and dismounted and sat down on a bank by the road-side. Here he tried to persuade himself, that the contents of the essay which he had read in the senate-house the day before were not true. The more, however, he reflected upon the authorities on which he knew them to be founded, the more he gave them credit; and the more he gave them credit, the more he was convinced that it was an imperious duty in some one to endeavour to see the sufferings of the unhappy Africans put to an end. Agitated in this manner, he reached London. This was in the summer of 1785. In the autumn of the same year he found himself often similarly exercised; till at length he began to have serious thoughts of devoting his life to the cause of injured Africa. Being then but twenty-four years of age, he considered his youth and his want of knowledge of the world as a great obstacle. Many other circumstances occurred to discourage him. He thought, however, that there was one way, in which he might begin to be useful to the cause; namely, by translating his Latin essay, and publishing it in English. Accordingly he began the work, and, having finished it, he was looking out for a publisher, when he accidentally met an old friend of his family, who belonged to the religious society of the Quakers. This gentleman, of his own accord, asked him why he had not published his prize essay in English. Many of his brethren (the Quakers), he said, were anxiously expecting it. Upon farther conversation, this gentleman introduced Mr. Clarkson to Mr. Phillips, a bookseller in George Yard, Lombard Street, and who was also of the religious society before mentioned; at which interview it was agreed that the latter should immediately publish the work. In a short time after this Mr. Phillips introduced Mr. Clarkson to Mr. Dillwyn of Walthamstow, one of the second class of coadjutors before-mentioned, with whom he spent the day. Here it was that he heard for the first time of the labors of Mr. Granville Sharp: and surprised he was to learn that Mr. Dillwyn had two years before associated himself with five others (as has been already mentioned), for the purpose of enlightening the public mind in England on this great subject, as also that a society had been formed in North America for the same purpose, with some of the principal of which Mr. Dillwyn was himself acquainted. He was almost overwhelmed with the thoughts, he says, which darted upon him on this occasion. He could not but consider that he had been providentially led to Mr. Dillwyn's house; that the day-star of African liberty was rising; and that probably he

himself might be now permitted to have the honor of becoming a humble instrument in promoting it.

Soon after this he was introduced to the venerable Mr. Sharp, the last and most eminent of the second class of coadjutors, and soon after this his work came out under the title of An Essay on the Slavery and Commerce of the Human Species, particularly the African, which was honored with the first prize in the University of Cambridge, for the year 1785. The work having been now ushered into the world (this was in June 1786), Mr. Clarkson resolved upon the distribution of it in the most select manner he could, in order that the case of the unhappy Africans might be known by those who had in some degree the power of relieving them. Accordingly, at his request, Dr. Baker, a clergyman in London, lord and lady Scarsdale, Sir Charles and lady Middleton, and Mr. Bennet Langton, the intimate friend of Dr. Johnson, of Jonas Hanway, of Sir Joshua Reynolds, of Edmund Burke, and of other celebrated persons, undertook to distribute copies of it personally among their own friends, in the higher ranks of life, and to use their interest in procuring a perusal of them. Under their auspices the book was first introduced into the polite world. The mind, however, of the author became daily more and more agitated on the subject of it. He was not satisfied that what he was then doing was all that was necessary to be done; or that it was all that was required of him. To make the case of the unhappy Africans known was desirable as a first step; but would this of itself put a stop to the horrors of the trade? He believed not: he believed there would be no hope of success, unless some one would resolve to make it the business of his life. The question then was, was he himself called upon to do it? His own peace of mind required that he should give a final answer to this question. To do this he retired frequently into solitude. The result was, after the most mature deliberation, and the most painful struggle, that he determined to devote his whole life, should it be necessary, to the cause. This determination was made about the latter end of December, 1786; in the beginning of 1787 the distribution of the essay went on, but by additional hands. Mr. Sheldon, Sir Herbert Mackworth, lord Balgonie (now lord Leven), each took a part on the occasion. The Quakers joined in the distribution also, among whom Mr. Richard Phillips (still also living we believe) is to be particularly noticed. This arrangement having been made, Mr. Clarkson was now able to devote all his time to qualify himself for the arduous situation to which he had devoted himself. He gained introductions to persons who had been in Africa and the West Indies, and obtained still farther information on the subject in its different branches. He visited slave ships lying in the Thames, either as they came in or sailed out of port, that he might know their construction and other particulars. He went frequently to the custom-house in London, where he learnt the nature of the articles which constituted the traffic, the loss of seamen employed in it, and other matters which he found it essential

to know. He kept up a correspondence with persons in Liverpool for the same purpose. He visited also members of parliament, and this almost daily, to interest them in his cause; to give them information; to answer questions; and to explain doubts, if they had any, on any part of the subject.

Among those who appeared most affected by his visits, and most anxious to co-operate with him, was Mr. Wilberforce, the member for the county of York. This gentleman not only read the evidence which Mr. Clarkson sent him on the subject, as he collected it fresh from day to day, but actually sent for, and took the pains to examine, at his own house, those persons who had given it, that he might judge for himself, from their own mouths, of the truth or falsehood of the enormities which had been charged upon the slave trade. The same gentleman appointed also a meeting once a week, at his own house, of a few select friends, to deliberate on the propriety, and, if this were resolved upon, on the proper method of taking up the cause. These meetings continued for some time, when at length, at a dinner at the house of Mr. Bennet Langton, who has been before-mentioned, where several persons of consequence were invited for the purpose of talking over the matter, and of coming to a final determination upon it, Mr. Wilberforce pledged himself to bring forward the great question of the abolition of the slave trade in parliament, as soon as ever he should feel himself prepared for so tremendous a task. Here then the matter began to assume a shape. A parliamentary leader had been secured, and one whose virtuous life corresponded with the sacredness of the cause which he was to advocate. Mr. Clarkson, who was present at this dinner, carried directly the news of what had taken place to several of his friends, but particularly to Mr. Granville Sharp, Mr. Dillwyn, and three or four others of the religious society of the Quakers, all of whom he had previously taught to expect such a result. The consequence was, that the following persons met the next day, and without loss of time formed themselves into a committee, 'for procuring such information and evidence, and publishing the same, as may tend to the abolition of the slave trade, and for directing the application of such monies as may be collected for the above purpose,' viz. Granville Sharp, Samuel Hoare, George Harrison, John Lloyd, Joseph Woods, Willian Dillwyn, Thomas Clarkson, Richard Phillips, James Phillips, Philip Sansom, John Barton, and Joseph Hooper. Mr. Granville Sharp, the first mentioned, may be considered, from what has been before said, as representing the first of the classes which have been described. The four next were the real representatives of the second. The third class, or that of the Quakers in America, may be considered as represented in the person of William Dillwyn, by whom, indeed, it was afterwards united to the committee now formed; and Mr. Clarkson and Mr. R. Phillips as representing the fourth, most of the members of which they had been the means of raising. 'Thus,' says the historian, 'on the 22d of May, 1787, the representatives of all the four classes, of which I

have been giving a history from the year 1516, met together, and were united in that committee to which I have been all along directing the attention of the reader; a committee, which, laboring afterwards with Mr. Wilberforce as a parliamentary head, did, under Providence, in the space of twenty years, contribute to put an end to a trade, which, measuring its magnitude by its crimes and sufferings, was the greatest practical evil that ever afflicted the human race. After the formation of the committee, notice was sent to Mr. Wilberforce of the event; and a friendship began, which has continued uninterruptedly between them from that to the present day.' In the following month, that is, in June 1787, the committee simplified its former title, and was ushered into the world. It professed to have nothing to do with the emancipation of slaves already in bondage. Its only object was the abolition of the African slave trade. From this period we shall trace the history of its proceedings annually.

When the committee was formed, Mr. Clarkson drew up 'A Summary View of the Slave-Trade, and of the probable Consequences of its Abolition.' It consisted only of about a dozen pages. It detailed the different methods of making slaves in Africa, their treatment, sufferings, and mortality in the passage; and also the treatment of the survivors in the colonies to which they were carried; and it promised the publication of an Essay on the Impolicy of the Slave-Trade. This Summary the committee determined to print, and to circulate all over the kingdom. In the mean time Mr. Clarkson was to take a journey to the different slave-ports, to increase his own knowledge of the subject. The first place he visited was Bristol, where he resided for some weeks. Here he obtained a knowledge of several articles of African produce, such as rice, indigo, cotton, spices, and woods, and collected specimens of them. He obtained specimens also of the different manufactures of the natives of Africa, both in wood, cotton, leather, iron, and gold. He examined the construction of slave-ships, and took the dimensions of several. He obtained histories of their former voyages. He collected chains, handcuffs, thumb-screws, and other horrid instruments used in this execrable traffic. He discovered the scandalous modes of procuring and paying those seamen who were employed in it, the sad ratio of their mortality on the voyage, and the prodigious difference between the mortality of these and of those employed in other trades, of which he was enabled to take a comprehensive view, from procuring the muster-rolls of almost every ship belonging to the port. But that which hurt his feelings the most, and which kept him indeed in a state of constant misery while in Bristol, was the barbarous usage, and this almost without an exception, of the seamen employed in this traffic. He took many out of the slave-vessels there. He took up the cause of some of these, and obtained damages for them in the courts of law. He sent a chief mate to prison for the murder of one of the crew acting under him. While at Bristol he formed a committee to act in union with that of London, and obtained pro-

mises of petitions to parliament against the continuance of the inhuman traffic from that city, and from Bath, Monmouth, and Bridgewater. On his journey from Bristol to Liverpool he procured the promise of similar petitions from Gloucester, Worcester, and Chester, and secured the provincial newspapers as he travelled on in behalf of his cause. On his arrival at Liverpool he followed the same line of enquiry as at Bristol, for six weeks, after which period (so incensed were merchants, captains of ships, and others connected with the trade, against him) it would have been dangerous to stay. From thence he visited Lancaster, the last of the slave-ports, and at length returned to London, after an absence of five months, in the December of 1787. The committee, in the mean while, that is, during his absence, had been equally well employed, and had been equally indefatigable. The first thing they did was to make known, by public advertisement, their existence as a committee, and the great object they had in view. They ordered a seal to be engraved for their correspondence. The device upon it was a negro in chains, kneeling, and in a supplicating manner lifting up his hands to heaven. The motto round the device consisted of these words, 'Am I not a man and a brother?' They then added to their committee to increase their laborers; and, having done so, they directly opened a correspondence throughout England, Wales, and Scotland, which they extended afterwards to America. This gave them an opportunity of making their cause known in the most extensive manner. Accordingly, when things had been thus prepared, they circulated many thousands of the Summary Views before-mentioned, and, at the same time, addressed by letter all the corporate bodies in the kingdom. These efforts soon convinced them that there were thousands of kindred souls in their own country, who felt with them on the great subject of their institution. The Quakers were the first, as a body, to acknowledge and approve it; the general Baptists the next: then followed letters of approbation, and promises of support, from people of all religious denominations. Among these were the famous Dr. Price and John Wesley; Mr. Rose, the historian and poet; Dr. Porteus, bishop of Chester; Dr. Woodward, bishop of Cloyne; Dr. Hinchliffe, bishop of Peterborough; Dr. Horne, afterwards bishop of Norwich; Dr. Bathurst, now bishop of the same; archdeacons Paley and Plymley (now Corbett); the celebrated marquis de la Fayette, who was soon afterwards conspicuous in the French revolution; and Brissot and Claviere, afterwards two distinguished members of the national convention in France, and who suffered under the tyranny of Robespierre. This good feeling continued to spread, when, in the month of February, 1788, there appeared to be among the people of England a general feeling in behalf of the injured Africans. By this time thirty-five petitions had been presented to parliament from different places, praying for the abolition of the slave-trade, and several others had been resolved upon. These proceedings produced such an effect upon the government that the king was advised to

order a committee of privy-council to enquire into the nature of the slave-trade. This order was dated February 11. An enquiry was of course immediately set on foot. The first witnesses examined were persons sent expressly as delegates from Liverpool, who had not only been themselves in the trade, but who were then interested in its continuance. These endeavoured to show that none of the enormities with which it had been charged belonged to it; and that it was even attended with circumstances favorable to the unhappy victims of it. A great prejudice therefore was excited, in the very beginning of the enquiry, in the minds of some of the privy-council against the abolitionists, whom they considered as misinforming the public mind with respect to a traffic which appeared to be so vitally connected with the manufacturing and commercial interests of the country, that it would be almost national ruin to abolish it. Happy was it for the cause, at this moment, that Mr. Clarkson had taken his journey to Bristol and other places, as before-mentioned; for he had become acquainted, in the course of it, with persons who had witnessed the horrors of the trade; but who, having then quitted it, had no interest in concealing the truth. These, though few, were highly respectable; and their evidence, when called before the council, contributed to counteract that of the Liverpool delegates, and others, and to turn the tide, which had run so strong against the abolitionists, in their favor. The enquiry, which had been thus set on foot, continued through February, March, April, and a part of May. During this time the petitions from the people to parliament had increased to 103. The committee also had circulated many new books throughout the kingdom, written by eye-witnesses of the several facts they contained, and all contributing to give new information, and to add new horror to the trade. Mr. Wilberforce also had been preparing to introduce the subject into parliament; but, at the time when his motion was expected, he was too ill to make it. Indeed his life was despaired of. Under these circumstances, his friend, Mr. Pitt, then chancellor of the exchequer and prime minister, undertook to supply his place. On the 9th of May he opened the business in the house of commons, and concluded by a motion, 'that this house will, early in the next session of parliament, proceed to take into consideration the circumstances of the slave-trade complained of in the petitions, and what may be fit to be done thereupon.' A discussion took place in consequence, during which there was an apparent enthusiasm in the house in behalf of the injured Africans. The members for Liverpool, however, denied the existence of any of the cruelties complained of; but they did not oppose the motion, and therefore it was unanimously agreed to. This pledge having been given by parliament, the public seemed satisfied with it, and of course nothing more was expected in that session; when, on the 21st of May, Sir William Dolben suddenly rose up in the house of commons, and moved for leave to bring in a bill on the subject of the slave-trade. As the trade, he said, was evidently allowed to go on till the next session,

he thought it was the duty of the house to take care that it should be carried on with as much humanity as possible in the interim. His great object, therefore, was to alleviate the sufferings of the poor Africans in their transportation, by allowing them more room, which might be done by regulating the number to be carried by the tonnage of the vessel. Leave was accordingly given; but the merchants of Liverpool determined to oppose the bill in every stage. They despatched immediately to London those very persons to be examined before the house whom they had before sent for examination to the privy-council. When counsel had closed their case, a debate ensued, in which the statements of these witnesses were exposed, greatly to their mortification, and the bill passed by a majority of fifty-five to five. It was then carried to the lords. Here a still more determined opposition was begun, and carried on in such a manner, and with so much apparent success (the house being very thin at that season), as to alarm the abolitionists, not only for the fate of the bill itself, but for that of their great question the ensuing year. At length it passed the upper house, as through an ordeal of fire, and received the king's assent, on July 11. During all this time the privy-council continued their examinations. Mr. Clarkson underwent an examination among others. It was at this time that he brought out his powerful essay on the impolicy of the slave-trade. This was circulated in great numbers by the committee, upon whom too much praise cannot be bestowed for their labors. From July 1787 to July 1788, the time we are now come to, they had held fifty-one long committees: they had held as many more sub-committees: they had distributed (besides 26,526 reports, debates in parliament, and other matters) 51,432 pamphlets or books. They had roused the feelings of the whole English nation, and had attracted the notice of some of the most distinguished persons in France and Germany.

The session of 1788 was no sooner over than Mr. Clarkson undertook a journey to all the seaports between Kent and Cornwall. His object was to find out, if possible, new witnesses to strengthen the good cause. He met with considerable success in his journey, and he formed committees, auxiliary to that of London, as he went along. On his return to London he was again examined by the privy-council, to whom he showed, by way of evidence, his collection of African curiosities, consisting of produce and manufactures, which he had now completed. He introduced also to their lordships, for examination, all the new witnesses he had discovered, and whose testimony was of the highest value. The committee, in the mean time, had been indefatigable. They had directed their correspondence to new parts of the kingdom, as well as of North America. They had addressed the rulers of Spain, Portugal, and Sweden, in behalf of their institution, and had opened a communication with Germany on the same subject. They had printed and circulated no less than five new works to promote their cause, and, besides, that famous engraving of the section of the slave-ship (where the bodies of the negroes were seen

packed in the different parts of it), which afterwards excited such universal sympathy in the country, and which caused such a universal abhorrence of the trade. About this time, that is, on the 19th of March, 1789, Mr. Wilberforce, who was then but just recovered from his long and severe illness, moved, in the commons, that the house should on Thursday, the 29th of April, take into consideration its own resolution of the last session. This motion was agreed to; but it became immediately the signal to all those who supposed themselves interested in the continuance of the trade, such as planters, mortgagees, merchants, manufacturers, and others, to begin a tremendous opposition. Meetings were called, and frightful resolutions entered into. The public papers were filled with them. Here, as well as in pamphlets, the most bitter invectives were poured forth against the abolitionists. Emancipation was industriously confounded with abolition. Compensation was demanded to a most monstrous degree. The cry, indeed, was such that many began to be staggered about the propriety of the total abolition of the trade. At this time Mr. Pitt, his majesty's chancellor of the exchequer, laid the privy-council report, consisting of the examinations before-mentioned, which came out in the shape of a large folio volume in print, upon the table of the house of commons, and moved, in order that members might have time to become acquainted with the evidence it contained, that the consideration of the slave-trade, which stood, by Mr. Wilberforce's motion, for the 29th of April, should be postponed to the 12th of May. This was agreed to. On the day appointed Mr. Wilberforce rose, and, in a speech of three hours and a half, introduced the great question into parliament. He reasoned entirely from the evidence contained in the report just mentioned, and deduced from it twelve grand propositions, which he read, and then laid them upon the table. These propositions contained the whole question. He wished them to be argued at a future day. Upon this, great opposition was manifested by the members for Liverpool and others, and a warm debate took place, when it was agreed that they should be taken into consideration on the 21st of May. When the day arrived, several petitions were presented to the house, by persons interested in the traffic, against its abolition. Mr. Wilberforce rose up and addressed the house. After this, an altercation took place rather than a debate, in which much heat and animosity were manifested. Those members who espoused the cause of the interested persons, seeing that it would be overthrown, if they judged of the merits of it by the privy-council report, would not now abide by the latter, but rejected it as an imperfect sort of evidence, and demanded that witnesses should be heard at the bar of the house of commons in explanation of many of the mis-statements which that book contained. By these means they endeavoured to get rid of the propositions altogether. Their demand, however, after a good deal of contention, was complied with, and on the 26th of May counsel were heard, and one witness, a slave-captain, was examined. Their object now was to interpose every legal species of

delay, and in this they succeeded so well that from the 26th of May to the 9th of June only two of their witnesses had been examined. In this slow way they went on till the 23d of the same month, when it was seen that it would be utterly impossible to bring the question to a final decision in that session; for they declared that they had many evidences yet to produce, and that they must and would be heard. Accordingly they moved, and Mr. Wilberforce agreed, that the farther consideration of the subject should be postponed to the next sessions.

Those who were interested in the continuance of the trade, having now got rid of the privy-council report, and introduced new evidences to the commons in behalf of their case, it became the committee to collect as respectable a body of witnesses as possible on their own side of the question. Mr. Clarkson had undertaken to traverse the kingdom again for this purpose, and had set out, when, hearing that the French revolution had broken out, and that a committee for the abolition of the slave-trade had been formed in Paris, he returned, and immediately hastened to the latter city, where he arrived at the latter end of July. He soon became acquainted with the marquis de la Fayette, monsieur Necker, the duke de la Rochefoucauld, the marquis de Condorcet, and Messrs. Mirabeau, Petion, Brissot, Claviere, and other distinguished persons. He spent his time, while in Paris, in attending the committee there, in visiting members of the National Assembly, and in the personal distribution of books among them, but particularly his *Essay on the Impolicy of the Slave-Trade*, which he had caused to be translated into French for that purpose. Returning to London, in January 1790, he found that Mr. Wilberforce had carried a motion in the commons, that witnesses should not be examined in future at the bar of that house, but in a committee-room, which should be open to all members. This was necessary for the sake of despatch, as the examinations otherwise might have taken up ten years. Mr. Clarkson now resumed the journey which he had begun in the preceding summer, in search of new and respectable witnesses. He made a tour of 1200 miles in three weeks, during which he found out sixteen persons capable of giving good testimony on the subject, but could only prevail upon three to be examined. On his return to London, he found that the examinations of witnesses in behalf of those interested were going on in the committee of the house of commons, and with so much rapidity that it was expected their case would be soon closed. This alarmed him exceedingly; for out of seventeen persons who stood upon his list as having promised to give their testimony in behalf of the abolition, one had lately died, and no less than eight, being seafaring persons, were then out of the kingdom. He determined, therefore, upon another journey; and, on turning the subject over in his mind, he thought he should obtain the greatest number of disinterested witnesses, in the shortest possible time, if he could go on board all the ships of war lying in ordinary at the king's ports in different parts of the kingdom. Impressed with this idea, he went to

Deptford, and first boarded all the men of war that were lying there. He then proceeded to Woolwich, and afterwards to Chatham, Sheerness, Portsmouth, and Plymouth, where he boarded others in like manner, to the number altogether of 400, in which he picked up several very excellent and important witnesses. On the 20th of April, the persons interested had just closed their case. Accordingly Mr. Wilberforce moved, on the 23d of the same month, in the house of commons, that witnesses should be heard in behalf of the abolition. Upon this much clamor ensued. The members who acted in union with the persons interested in the continuance of the slave-trade wished to have the case directly argued, that is, upon their own evidence, and without hearing any on the other side, and resisted accordingly. Their opposition, however, proved ineffectual against the eloquence of Mr. Wilberforce, supported powerfully as he was by that of Mr. Pitt and Mr. Fox. At length the witnesses in behalf of the abolition took possession of the ground which the others had left, and no less than twenty-four, some of whom had been found out since the last tour, were examined before the close of the session. At this time it is very curious to remark that the feelings of parliament, and those of the people, were very different on this great question. The tide certainly ran against the abolitionists in the house of commons. The old hue and cry had been revived of intended emancipation under the pretence of abolition; of monstrous indemnification to the planters; and of the certain massacre of the whites by the negroes, if the trade were to be abolished, but in more furious language, and to a greater extent than before. The feeling, on the other hand, in the country, was warmly on the side of the abolition. It had been kept up and increased by various circumstances. The committee had been daily employed in answering, through the medium of the public papers, every objection which had been started as hostile to their cause. They had also by this time distributed all over England, Scotland, and Wales, the horrible and affecting engraving of the section of the slave ship before mentioned. Individuals, too, had kept alive the popular feeling in various ways. Wedgewood, the celebrated manufacturer, had taken the committee's seal, as before explained, for a model, and had struck off and distributed many thousand small cameos in plaster. The ground of each of these cameos was white, but the negro, who was seen imploring compassion on his knees in the middle of it, was of his own native color. Cowper also, and other poets, had written beautiful and affecting songs on the subject. These were circulated very copiously through the kingdom, and some of them were sung in the very streets.

Not more than half the evidence, which was deemed necessary, having been heard on the side of the abolition in the session just passed, it became a duty in the committee to use every possible exertion to complete it, and this in the best possible manner, before the next. Mr. Clarkson was, therefore, again solicited to traverse the kingdom, and Mr. Wilberforce prepared an in-

genious list of questions to assist him in his examinations and enquiries. With this he departed, and travelled from August 1790 to February 1791, during which time he went over the greatest part of the island, and had the good fortune to add a considerable number of new and important witnesses to his list. At length the examinations were resumed in the committee of the house of commons, and closed finally on the 4th of April. No less than sixty-nine persons had given their testimony, in this and the preceding session, in behalf of the abolition of the slave-trade. The evidence having been printed on both sides for the use of the members, as the basis upon which to argue the case, the 18th of April was fixed upon as the day for deciding it. By this time every effort had been made by the persons interested to render the question unpopular in the commons. Emancipation, indemnification, massacre, ruin, had been vociferated over and over again in the ears of the members there. At this time, unhappily, the most sanguinary scenes were taking place in St. Domingo, in consequence of the revolution which had been effected there, and an insurrection had broken out in the British island of Dominica. All these had been industriously detailed in print, but with great exaggeration, and added to the cries just mentioned. This union of reports and cries had produced such a terrific effect upon many members, that they considered the abolitionists, by persevering in their question, as ferocious monsters; and in this unfavorable frame of mind they went into the house on the day fixed for the discussion, to discharge their duty with respect to this great question. On this day, namely, the 18th of April, 1791, Mr. Wilberforce made a most luminous and affecting speech, in which he took a most masterly view of the whole question in all its different departments, as it related both to Africa and the West Indies. He argued the inhumanity of the traffic; he argued its impolicy; he appealed to feeling; he appealed to reason; he tried to disarm his opponents by candor; he exhorted them to attend to their own interest; and concluded by moving for leave to bring in a bill to prevent the farther importation of slaves into the British colonies in the West Indies. After this, a most serious discussion ensued, which lasted till three in the morning, when, several members being yet desirous of speaking, the business was adjourned to the next day. It was then argued again till half past three in the morning, when the house divided on the original motion. There were for it but eighty-eight votes, and against it 163; so that this great cause of humanity, justice, and religion, which had cost so many years of labor, was lost by a majority of seventy-five votes. Upon the news of this signal defeat, the committee for the abolition of the slave-trade held a meeting, which was conducted with the most solemn dignity. They voted thanks to the illustrious minority which had lately stood forth the assertors of British justice and humanity, and the enemies of a traffic in the blood of man; and entered into several resolutions, the substance of one of which was, that they considered the late decision of the house rather as a

delay than a defeat; that they did not despair of final success; and that they would never desist from appealing to their countrymen, till the commercial intercourse with Africa should cease to be polluted with the blood of its inhabitants. These resolutions were followed up by a suitable report, and sent to all the country committees throughout the kingdom. At length the session ended, and a cruel one it had proved to those who had interested themselves in the abolition of this cruel traffic. The defeat, however, which they had experienced, had been rendered more tolerable, because, in consequence of the unjust clamors by which the minds of many members of parliament had been affected, it had been expected. It had been rendered more tolerable again, by knowing that several of the most distinguished characters in the kingdom, and all of splendid talents in the house of commons, such as Pitt, Fox, Burke, Grey, Sheridan, Wyndham, Whitbread, Courtnay, Francis, Rider, W. Smith, and H. Thornton, had supported the sacred cause; and because a bill had been carried through both houses of parliament in this very session for the establishment of the Sierra Leonia Company.

The people of England, soon after this defeat, began to be sensibly affected by this question; and many, in order to wash their hands of the blood of Africa, left off the use of sugar. Mr. Clarkson, after a consultation with Mr. Wilberforce and the committee, undertook to abridge the evidence which had been offered to the house of commons on the side of the abolition, with a view of circulating its horrible contents through the kingdom, and of thus making the public impression still deeper. This abridgment was begun in June 1791, and was written, printed, and in the hands of all the committee's correspondents in England, Wales, and Scotland, by the latter end of September. Mr. Clarkson now undertook to follow the book, and to see, if possible, that it was actually read. Accordingly he left London in the beginning of November. It was his intention to wait personally upon every person in every county in the kingdom, to whom the book had been sent, to get others of the town or neighbourhood to meet him there, to converse with them on the subject, to entreat their individual perusal of the abridgment, and their united efforts in lending it out judiciously, and in seeing that it was read. This he attempted to realise, but the process was very tedious. He had travelled 6000 miles in the execution of his plan, when he found that he had yet 4000 to go. To perform this was impossible, so as to answer the purpose. He therefore made his situation known to the committee. The consequence was, that Dr. Dickson, a gentleman who had greatly assisted the cause by his writings, set off from London, and took the whole of Scotland off his hands. The result of the two journeys was soon visible. The people could not bear the facts which the abridgment had disclosed to them. Great numbers left off immediately the use both of sugar and rum. The great bulk of the nation, however, vented their feelings in public meetings to address the legislature on the subject, and this

they did with so much earnestness and activity, that by the latter end of the month of March, 1792, no less than 517 petitions, including several from whole counties, were laid on the table of the house of commons, praying for the total abolition of the slave-trade. Emboldened and supported in this manner by the voice of the people, Mr. Wilberforce introduced the question again into the commons. This was on the 2d of April. After a speech of four hours, during which he added a profusion of new light to the subject, and during which he endeavoured, in the most mild and persuasive manner, to do away objections and prejudices, he moved, 'that it is the opinion of this house that the African slave-trade ought to be abolished.' This led to a very long and uncommonly interesting debate. Never, certainly, in the house of commons, and never probably in any other place, was so much splendid oratory displayed, as on that night, on the side of the abolition of the slave-trade. It appeared, in the course of the debate, to be the sense of the house that some sort of abolition should take place. Two divisions took place. In the first there were 193 votes for gradual abolition, and 125 for immediate; and, in the second, there were 230 for gradual, and eighty-five for no abolition at all. In this state the question was left till the 23d of April, when Mr. Dundas (afterwards lord Melville) came forward and proposed a plan conformable with the resolutions of the house just mentioned. The outlines of it, however, were opposed by Messrs. Pitt, Fox, and Wilberforce, not only as being very defective, but as built upon false data. The business was accordingly adjourned to the 23d. On that day Mr. Dundas brought forward the subject again. He considered that eight years ought to be allowed the planters to stock themselves with negroes, and therefore moved that the year 1800 should be the epoch, after which no more slaves should be imported from Africa in British vessels to the West Indies. Lord Mornington (now marquis Wellesley), in a most brilliant speech, moved an amendment, which was, that the year 1793 should be substituted for that of 1800. There appeared on a division to be 158 for Mr. Dundas's motion, and 109 for the amendment. On the 27th of April the subject was resumed in the house. Mr. Dundas proposed the year 1800, as before, and lord Mornington the year 1793. His lordship's motion was again lost, but by a less majority than on the former occasion, viz. by 161 to 121, when Sir Edward Knatchbull struck out a middle line, by proposing the year 1796, which motion was carried by a majority of 151 to 132. The gradual abolition having been thus agreed upon for 1796, a committee of the commons carried the resolution to the lords. On the 8th of May the lords met to consider it, when, cruel to relate, a motion was made by lord Stormont, on the part of the planters, merchants, and other interested persons, to hear new evidence. This, after some little opposition, was acceded to. On the 15th of May the first witness on this side of the question was introduced; and on the 5th of June, when only seven witnesses had been examined on the same

side, all further examination was postponed to the next session.

Nothing could be more distressing to the abolitionists than this determination of the lords; first, because there was no saying how many, even years, the hearing of evidence there might take; and, secondly, because they (the abolitionists) had the laborious work to do over again, of finding out and keeping up a respectable body of witnesses on their own side of the question. This latter work was essentially necessary; for it was impossible to allow the persons interested to throw in a weight of testimony for the furtherance of their own cause, and not to take means to counteract it. Mr. Clarkson, therefore, set out again in the month of July, on his old errand. Dr. Dickson, the gentleman before-mentioned, left London about the same time, in order to assist him. He was to take a different route, which had been before settled. They were very successful in their respective journeys, and both returned in the month of February, 1793. The house of commons was then sitting. The only step to be taken there (but this was essentially necessary) was to bring before it, in some part or other of the session, its own vote of the former year, by which the slave-trade was to be abolished in 1796, in order that this vote might be reconsidered and renewed. Accordingly Mr. Wilberforce moved the house upon the subject. It is only necessary to state that his motion was most furiously opposed, and actually lost by a majority of sixty-one to fifty-three. By this determination the commons actually refused to sanction their own vote. In this distressing situation Mr. Wilberforce scarcely knew what to do. He was not, however, to be dismayed by one unexpected defeat. He resolved, therefore, that he would not allow the session to pass without trying the question in some other shape. Accordingly, in the month of May, he moved for leave to bring in a bill to abolish that part of the trade by which the British merchants supplied foreigners with slaves. His motion was carried, but only by a majority of seven; and, alas! on the third reading, it was lost by a majority of thirty-one to twenty-nine! During all this time the examination of witnesses had been going on in the house of Lords. Only seven witnesses, however, had been heard there in the course of the whole session. After this session the abolitionists were at a loss how to act for the advantage of their cause. One measure, however, was obviously necessary, viz. to endeavour to keep up a respectable body of evidence to oppose that which should be heard against the abolition in the lords.

For this purpose Mr. Clarkson, at the request of the committee, once more traversed the kingdom. He began his journey in September, and returned in February, 1794. Mr. Wilberforce, in the interim, moved in the commons for leave to renew his former bill for the abolition of the foreign slave trade, as carried on by British subjects. He carried it, though with great difficulty, in all its stages, through the house of commons; but it was almost directly lost in the house of lords. In this latter house only two evidences

had been examined in the course of the session. At this time Mr. Clarkson was in such a wretched state of health as to be unable to lend any farther assistance to the committee. The incessant labor of body and mind for so many years, aggravated by anxiety and disappointments, had made a very serious inroad upon his constitution. His nervous system had been literally shattered to pieces; his hearing, memory, and voice, were nearly gone. He was, in short, utterly incapable of any farther exertion; and he was therefore obliged, though very reluctantly, to be borne out of the field, where he had placed the great honor and glory of his life. The question was now in a very desperate state; for if the house of commons would not renew its own resolution, and if the lords would not abolish even the foreign part of the slave-trade, what hope was there of success? But neither, however, were Mr. Wilberforce nor the committee to be deterred by the prospect. They determined never to abandon the cause. Accordingly Mr. Wilberforce moved in the commons, in the session of 1795, for leave to bring in a bill for the abolition of the slave-trade. This motion was now necessary, and justifiable on that account, if the trade, according to a former resolution of that house, was to cease in 1796; but it was lost by a small majority.

In the session of 1796 Mr. Wilberforce resolved upon trying the question again, but in an entirely new form. He moved that the slave-trade be abolished in a limited time, but without assigning to its duration any specific date. He wished the house to agree to this as a general principle. After much opposition the principle was acknowledged; but when, in consequence of this acknowledgment of it, he brought in a bill, and attempted to introduce into one of the clauses the year 1797, as the period when the trade should cease, he lost it by a majority of seventy-four to seventy. He judged it prudent, after mature consideration, to let the session of 1797 pass without any parliamentary notice of the subject; but in that of 1798 he renewed his motion for abolition in a limited time. This, however, met with the same fate as the former.

In 1799 he tried the same motion again, when there appeared for it seventy-four, and against it eighty-two votes. He determined, however, that the remainder of the session should not pass without an effort to obtain something, if it were only a small part, of what belonged to the cause. Accordingly his estimable friend, Mr. Henry Thornton, lately deceased, brought in a bill, at his request, to abolish a very small part of the slave-trade. It may be remembered that a colony had been established at Sierra Leon, to promote agriculture and a new species of commerce in its neighbourhood. Now, while the slave-trade was carried on all around it, it was found that these objects could be but little advanced. The bill, therefore, of Mr. Thornton, went only so far as to say that the slave-trade should not be carried on within a certain distance of that colony. This bill was carried through the commons, but though it only asked that an infant establishment, founded on the principles of liberty, and this by parliamentary

sanction, should be protected from the ravages of the slave-trade, it was lost in the house of lords. This latter circumstance was indeed truly disheartening; yet, amidst the clouds which darkened the horizon, one gleam of hope appeared; for the question had been so argued, so sifted, and put into such various lights, that it began now to be understood. The consequence was that conviction flashed upon many, among whom were three planters, Mr. Ellis, Mr. Barham, and Mr. Vaughan. These gentlemen had the candor to rise up in the house of commons, and express themselves in favor of the abolition in one of the last debates.

The question had been now tried and lost in almost every possible shape; Mr. Wilberforce and the committee seemed to have but two alternatives of choice left them, either to persevere against all hope, or to hold themselves in readiness to seize the first favorable opportunity which should present itself for furthering the cause. It was determined to adopt the latter, and by no means to let the question degenerate into a mere annual motion of form. It was thought proper also, as several members of the house of commons were changing their opinions on the subject, to give others time to digest the powerful eloquence which had been expended upon it. Mr. Wilberforce, therefore, suffered the years 1800, 1801, 1802, and 1803, to pass over without noticing it. In 1804, however, he resolved to renew his exertions. The committee resolved to second them, and immediately increased its number, that it might act with extraordinary vigor. The circumstance which marked this year in particular as favorable for another trial was the union with Ireland, in consequence of which a great number of Irish members, generous, and open-hearted, and in general friends to the poor negroes, were added to the British parliament. Mr. Wilberforce, therefore, under these circumstances, asked leave to renew his bill for the abolition of the slave trade within a limited time. This motion was as violently opposed as any of the former, but was carried at length in a very handsome manner: no less than 124 divided in favor of it, and but forty-nine against it. The bill was opposed in its second reading, for which however there were 100, and against it but forty-two. When a motion was made for going into a committee it was opposed, but carried by seventy-nine to twenty. The bill also was opposed in its last stage, but carried by a majority of sixty-nine to thirty-six. It was taken up to the lords, but on a motion by lord Hawkesbury (afterwards lord Liverpool) the discussion there was put off till the next session.

In 1805 Mr. Wilberforce renewed his former motion. Leave was at length given him to bring in the bill, but not till after a most furious opposition. On the second reading of it the opposition increased, and an amendment was proposed, viz. to put it off to that day six months. This amendment was actually carried by a majority of seventy-seven to seventy. This defeat occasioned the abolitionists the severest disappointment. The committee instantly met, when sorrow was seen in the countenances of all present. Their first object was to endeavour to de-

veloped the causes of the miscarriage now mentioned. It appeared clearly, after the most minute examination, that these were accidental. The committee, therefore, resolved upon renewing the contest with redoubled vigor the ensuing year. Just at this moment who should join them but Mr. Clarkson! Eight years' retirement had nearly restored him, and the first moment he found himself able to embark again in the cause, he returned to his post. As it then seemed probable that the question would be carried the next year through the commons, and, if so, that it would go to the lords, and that the lords would probably require further evidence, it was judged proper that evidence should be prepared. But, alas! the noble band of witnesses which had been last collected, had been broken by death and dispersion, and a new one was to be formed. Herculean task! Tremendous, however, as it was, Mr. Clarkson undertook it. He left London in two or three days afterwards, and returned in January 1806, after having travelled in pursuit of his object above 5000 miles. In this month died Mr. Pitt, who was then prime minister, and who had been one of the great supporters of the cause.

This great question was once more ushered into parliament on the 31st of March, 1806, under new auspices, namely, under the administration of lord Grenville and Mr. Fox. It was thought proper that Mr. Wilberforce should be as it were in the back-ground on this occasion, and that the attorney-general should introduce it. The latter accordingly brought in a bill, one of the objects of which was to prohibit British merchants and British capital from being employed in the foreign slave trade. This bill passed both houses of parliament, and was therefore the first that dismembered this cruel traffic. In the debate which ensued upon it, it was declared in substance, both by lord Grenville and Mr. Fox, in their respective houses, that they would do every thing to effect the abolition, and, should they succeed in such a noble work, they would regard their success as entailing more true glory on their administration, and more honor and advantage on the country, than any other measure in which they could be engaged. Conformably with this sentiment, Mr. Fox himself, on the 10th of June, in a speech most luminous and pathetic, followed up the victory which had been just gained, by moving a resolution, 'that this house, considering the African slave trade to be contrary to the principles of humanity, justice, and policy, will, with all practical expedition, take effectual measures for the abolition of it, in such manner and at such a period as may be deemed most advisable.' This motion produced an opposition as before, and an interesting debate. It was supported by Sir Ralph Milbank, Mr. Francis, Sir Samuel Romilly, Mr. Wilberforce, lord Henry Petty (now marquis of Lansdown), Sir John Newport, Mr. Canning, and Mr. William Smith. It was carried by a majority of 114 to fifteen. Mr. Wilberforce directly moved an address to his majesty, 'praying him to direct a negotiation to be entered into, by which foreign powers should be invited to co-operate with his majesty, in measures to be adopted for the abo-

lition of the African slave trade.' This was also carried, but without a division. On the 24th of June, the lords met to consider both the resolution and address. A proposition was directly made in that house (in order to create delay), that counsel and evidence should be heard. This, however, was happily over-ruled. Lord Grenville then rose up and introduced the subject. His speech was among the master-pieces of eloquence. He was supported in the debate, which followed, by the lord chancellor (Erskine), the bishop of London (Dr. Porteus), the bishop of St. Asaph (Dr. Horsley), earl Grosvenor, earl Stanhope, earl Spencer, earl of Suffolk, and the lords Holland and Ellenborough. The resolution and address were at length both carried, by a majority of forty-one to twenty. After this a belief was generally prevalent that the slave trade would fall in the next session. This occasioned a fear in the abolitionists, lest it should be carried on in the interim, being as it were the last harvest of the merchants, to a tenfold extent, and therefore with tenfold murder and desolation to Africa. It was therefore thought necessary, as the session was about to close, to introduce another bill into parliament, and this as quickly as possible, that no new vessel should be permitted to go to the coast of Africa for slaves. Accordingly a bill to that effect was prepared, and it passed both houses. In the month of October following, after these great and decisive victories, died the right honorable Charles James Fox, one of the noblest champions of this noble cause. He had lived just to put it into a train for final triumph. This triumph, however, he enjoyed in anticipation. The prospect of it soothed his pains, and cheered his spirit in the hours of his sickness. At this melancholy season it became with him a frequent topic of conversation, and the hope of it was perceived to quiver on his lips, in one of the last moments of his life.

The session of 1807 had scarcely commenced when the contest was renewed. Lord Grenville judged it expedient, at this crisis, to reverse what had been hitherto the order of proceeding, that is, to agitate the question first in the house of lords. On the 2d of January he presented a bill there, which he called an act for the abolition of the African slave-trade. It was very short; he proposed that it should be printed, and that it should then lie on the table for a while, that it might be maturely considered before it was discussed. On the 4th no less than four counsel were heard against it. On the 5th the debate commenced. Lord Grenville took a brilliant part in it. He was supported by his highness the duke of Gloucester, the bishop of Durham (Dr. Barrington), the earls Moira, Selkirk, and Rosslyn, and the lords Holland, King, and Hood. The bill was at length carried, at four in the morning, by a majority of 100 to 36. On the 10th of February it went to the commons. On the 20th counsel were heard against it there. On the 23rd a debate ensued upon it, on the motion of lord viscount Howick (formerly Mr. Grey, and now lord Grey), who urged the commons to confirm it. The other speakers in favor of it were Mr. Roscoe, Mr. Fawkes, Mr. Lushington, the lords Mahon and Milton, Sir

Samuel Romilly, Sir John Doyle, Mr. Wilberforce, and earl Percy; and it was carried by the vast majority of 283 to 16. On the 6th of March the blanks were filled up. It was proposed first that no vessel should clear out for slaves from any port within the British dominions after the 1st of May following, that is, 1807, and that no slave should be landed in the British colonies after the 1st of March 1808. This and almost every other proposition were opposed, but happily without effect. Suffice it to say, that on the 18th, the bill, with the blanks filled up, was carried back to the lords; that in consequence of various amendments, it passed and repassed from one house to the other, but always with opposition; that on the 24th it passed both houses; and that on the 25th, at half past eleven in the morning, it received the royal assent, and the joy it occasioned to the friends of humanity throughout the kingdom was farther heightened by the intelligence that the government of the United States had passed a similar bill. In 1833, slavery may be said to have been wholly abolished: at this date £20,000,000 were granted by parliament to compensate the existing slave proprietors.

In France the Bourbons proposed to abolish the slave-trade at a distant period. Upon the return of Buonaparte from Elba, however, an order was issued for its immediate abolition; and a decree to the same purpose passed after the expulsion of Napoleon.

**SLAVER**, *n. s., v. n., & v. a.* Isl. *slafa*; Lat. *saliva*. Spittle running from the mouth; drivel: to be smeared with or emit spittle: to smear with spittle.

#### Should I

*Slaver* with lips as common as the stairs  
That mount the capitol; join gripes with hands  
Made hard with hourly falsehood as with labour.

*Shakespeare.*

Mathiolus hath a passage, that a toad communicates its venom not only by urine, but by the humidity and *slaver* of its mouth which will not consist with truth.

*Browne.*

Miso came w<sup>t</sup> scowling eyes to deliver a *slavering* good-morrow to the two ladies.

*Sidney.*

Twitched by the slave, he mouths it more and more,  
Till with white froth his gown is *slavered* o'er.

*Dryden.*

Of all mad creatures, if the learn'd are right,  
It is the *slater* kills, and not the bite.

*Pope.*

Why must he sputter, spawl, and *slaver* it,  
In vain, against the people's favourite?

*Swift.*

**SLAVERY** is a word of which, though generally understood, it is not easy to give a proper definition. An excellent moral writer has defined it to be 'an obligation to labor for the benefit of the master, without the contract or consent of the servant.' But, may not he be properly called a slave who has given up his freedom to discharge a debt which he could not otherwise pay, or who has thrown it away at a game at hazard? In many nations debts have been legally discharged in this manner; and, among the ancient Germans, such was the universal ardor for gaming, that it was no uncommon thing for a man, after having lost at play all his other property, to stake, on a single throw of dice, himself, his wife, and his children.—Tac. de Mor. Germ. That persons

who have thus lost their liberty are slaves, will hardly be denied; and surely the infatuated gamester is a slave by his own contract. The debtor, too, if he was aware of the law, and contracted debts larger than he could reasonably expect to be able to pay, may justly be considered as having come under an obligation to labor for the benefit of a master with his own consent; for every man is answerable for all the known consequences of his voluntary actions. This definition of slavery seems to be defective as well as inaccurate. A man may be under an obligation to labor through life for the benefit of a master, and yet that master have no right to dispose of him by sale, or in any other way to make him the property of a third person; but the word slave, as used among us, always denotes a person who may be bought and sold like a beast in the market. Cicero defines slavery to be 'the obedience of a degraded and abject mind, which has no will of its own.' In its original sense, indeed, the word slave was of the same import with noble, illustrious; but vast numbers of the people called Slavi, among whom it had that signification, being, in the decline of the Roman empire, sold by their countrymen to the Venetians, and by them dispersed over all Europe, the word slave came to denote a person in the lowest state of servitude, who was considered as the absolute property of his master.

As nothing can be more evident than that all men have, by the law of nature, an equal right to life, liberty, the produce of their own labor, and the property of their own persons, it is not easy to conceive what can have first led one part of them to imagine that they had a right to enslave another. Inequalities of rank are indeed inevitable in civil society; and from them results that servitude which is founded in contract, and is of temporary duration. He who has much property has many things to attend to, and must be disposed to hire persons to assist and serve him; while those who have little or no property must be equally willing to be hired for that purpose. And, if the master be kind, and the servant faithful, they will both be happier in this connexion than they could have been out of it. But, from a state of servitude, where the slave is at the absolute disposal of his master in all things, and may be transferred without his own consent from one proprietor to another, like an ox or an ass, happiness must be for ever banished. How then came a traffic so unnatural and unjust as that of slaves to be originally introduced into the world? The common answer to this question is, that it took its rise among savages, who, in their frequent wars with each other, either massacred their captives in cold blood, or condemned them to perpetual slavery. In support of this opinion it is urged that the Latin word servus, which signifies not a hired servant, but a slave, is derived from servare, to preserve; and that such men were called servi, because they were captives whose lives were preserved on the condition of their becoming the property of the victor. That slavery had its origin from war we think extremely probable; nor are we inclined to controvert this etymology of the word servus; but the traffic in men prevailed almost universally long

before the Latin language or Roman name was heard of: and there is no good evidence that it began among savages. The word עָבֵד in the Old Testament, which in our version is rendered servant, signifies literally a slave, either born in the family or bought with money, in contradistinction to שְׂרִיר, which denotes a hired servant: and, as Noah makes use of the word עָבֵד in the curse which he denounces upon Ham and Canaan immediately after the deluge, it would appear that slavery had its origin before that event. If so, there can be little doubt but that it began among those violent persons whom our translators have called giants, though the original word עַבְלִים literally signifies assaulters of others.

Those wretches seem first to have seized upon women, whom they forcibly compelled to minister to their pleasures; and from this kind of violence the progress was natural to that by which they enslaved their weaker brethren among the men, obliging them to labor for their benefit without allowing them wages. After the deluge the first dealer in slaves seems to have been Nimrod. ‘He began,’ we are told, ‘to be a mighty one in the earth, and was a mighty hunter before the Lord.’ He could not, however, be the first hunter of wild beasts; for that species of hunting must have been practised from the beginning; nor is it probable that his dexterity in the chase, which was then the universal employment, could have been so far superior to that of all his contemporaries as to entitle him to the appellation of the ‘mighty hunter before the Lord.’ Hence most commentators have concluded that he was a hunter of men; an opinion which they found upon the import of his name, the word Nimrod signifying a rebel. Whatever be in this, there can be little doubt but that he became a mighty one by violence; for, being the sixth son of his father, and apparently much younger than the other five, it is not likely that his inheritance exceeded theirs either in extent or in population. He enlarged it, however, by conquest; for it appears from Scripture that he invaded the territories of Ashur the son of Shem, who had settled in Shinar; and, obliging him to remove into Assyria, he seized upon Babylon, and made it the capital of the first kingdom in the world. As he had great projects in view, it seems to be in a high degree probable that he made bond-servants of the captives whom he took in his wars, and employed them in building or repairing the metropolis of his kingdom; and hence we think is to be dated the origin of post-diluvian slavery. That it began thus early can hardly be questioned; for we know that it prevailed universally in the age of Abraham, who was born within seventy years after the death of Nimrod. That patriarch had 318 servants or slaves, born in his own house, and trained to arms, with whom he pursued and conquered the four kings who had taken captive his brother’s son. And it appears, from the conversation which took place between him and the king of Sodom after the battle, that both believed the conqueror had a right to consider his prisoners as part of his spoil. ‘Give me,’ says the king, ‘the persons, and take the goods to thyself.’ It

is indeed evident, from numberless passages of Scripture, that the domestics whom our translators call servants were in those days universally considered as the most valuable part of their master’s property, and classed with his flocks and herds. Thus, when the sacred historian describes the wealth of Abraham, he says that ‘he had sheep and oxen, and he-asses, and men-servants and maid-servants, and she-asses and camels.’ And when Abimelech wished to make some reparation to the patriarch, for the unintended injury he had done him, ‘he took sheep and oxen, and men-servants, and women-servants, and gave them unto Abraham, and restored to him Sarah his wife.’ The riches and power of Isaac and Jacob are estimated in the very same manner.

*Slavery among the ancient Jews.*—That the practice of buying and selling servants, thus early begun among the patriarchs, descended to their posterity, is known to every attentive reader of the Bible. It was expressly authorised by the Jewish law, in which are many directions how such servants were to be treated. They were to be bought only of the heathen; for if an Israelite grew poor and sold himself either to discharge a debt, or to procure the means of subsistence, he was to be treated not as a slave עָבֵד, but as a hired servant שְׂרִיר, and restored to freedom at the year of Jubilee. ‘Both thy bond-men and bond-maids,’ says Moses, ‘shall be of the heathen that are round about you: of them shall ye buy bond-men and bond-maids. And ye shall take them as an inheritance for your children after you, to inherit them for a possession; they shall be your bondmen for ever.’ Lev. xxv. 39–46. Unlimited as the power thus given to the Hebrews over their bond-servants of heathen extraction appears to have been, they were strictly prohibited from acquiring such property by any other means than fair purchase; ‘he that stealeth a man and selleth him,’ said their great lawgiver, ‘shall be surely put to death.’ Lev. xxi. 16.

*Slavery among the Germans.*—It has been noticed above, that among the ancient Germans it was not uncommon for an ardent gamester to lose his personal liberty by a throw of the dice. This was indeed a strong proof of savage manners; but the general condition of slaves among these savages seems to have been much better than among the polished Greeks and Romans. In Germany, the slaves were generally attached to the soil, and only employed in tending cattle, and carrying on the business of agriculture; for the menial offices of every great man’s house were performed by his wife and children. Such slaves are seldom beaten, chained, or imprisoned. Sometimes indeed they were killed by their masters in a fit of sudden passion; but none were considered as materials of commerce, except those who had originally been freemen, and lost their freedom by play. These, indeed, the successful gamester was very ready to sell, both because he felt them a useless burden, and because their presence continually put him in mind of that state to which a throw of the dice might one day reduce himself. Such is the account which Tacitus gives (De Mor. Germ. 24, 25) of slavery among the ancient Germans.

*Slavery among the Greeks.*—Whilst slavery, in a mild form, was permitted among the people of God, a much worse kind of it prevailed among the heathen nations of antiquity. With other abominable customs, the traffic in men quickly spread from Chaldea into Egypt, Arabia, and over all the east, and by degrees found its way into every known region under heaven. Of this hateful commerce we shall not attempt to trace the progress through every age and country, but shall only take a transient view of it among the Greeks and Romans, and a few other nations. One can hardly read a book of the *Iliad* or *Odyssey*, without perceiving that, in the age of Homer, all prisoners of war were treated as slaves, and compelled, without regard to rank, sex, or years, to labor for their masters in offices & the vilest drudgery. So universally was their cruel treatment of captives admitted to be the right of the victor, that the poet introduces Hector, when taking a tender and perhaps last farewell of his wife, telling her, as a thing of course, that, on the conquest of Troy, she would be compelled

To bear the victor's hard commands, or bring  
The weight of water from Hyperia's spring.

At an early period the Phœnicians had such an established commerce in slaves, that, not satisfied with reducing to bondage their prisoners of war, they kidnapped persons who had never offended them, to supply their foreign markets. In the *Odyssey*, b. 14, Ulysses represents himself as having narrowly escaped a snare of this kind laid for him by a false Phœnician. Such were the manners of the Greeks in the heroic age; nor were they much improved at the periods of greater refinement. Philip II. of Macedon, having conquered Thebans, not only sold his captives, but even took money for permitting the dead to be buried; and Alexander, who had more generosity than Philip, afterwards razed Thebes, and sold the inhabitants, men, women, and children, for slaves. See **Macedon**. This cruel treatment of a brave people may indeed have proceeded from the avarice of the conqueror, but more from the momentary resentment of a man who was savage and generous by turns, and who had no command of his passions. But, from the manner in which the Spartans behaved to their slaves, there is little reason to imagine, that, had they received from the Thebans the same provocation with Alexander, they would have treated their captives with greater lenity. ‘At Sparta,’ says the late humane and elegant Dr. Beattie, ‘slaves were treated with a degree of rigor that is hardly conceivable; although to them, as their husbands and artificers, their proud and idle masters were indebted for all the necessities of life. The Lacedemonian youth, trained up in the practice of deceiving and butchering those poor men, were from time to time let loose upon them, to show their proficiency in stratagem and massacre. And once, without any provocation, and merely for their own amusement, we are told that they murdered 3000 in one night, not only with the connivance of law, but by its avowed permission. Such, in promoting the happiness of one part of

society and the virtue of another, are the effects of slavery.’ It has been said that in Athens and Rome slaves were better treated than in Sparta: but in the former city their treatment cannot have been good, nor their lives comfortable, where the Athenians relished that tragedy of Euripides in which queen Hecuba is introduced as lamenting that she was chained like a dog at Agamemnon's gate.

*Slavery among the Romans*—Of the estimation in which slaves were held at Rome we may form a tolerable notion from the well known fact that one of those unhappy beings was often chained to the gate of a great man's house, to give admittance to the guests invited to the feast. In the early periods of the commonwealth it was customary, in certain sacred shows exhibited on solemn occasions, to drag through the circus a slave, who had been scourged to death holding in his hand a fork in the form of a gibbet. But we need not multiply proofs of the cruelty of the Romans to their slaves. If the inhuman combats of the gladiators (see **GLADIATORS**) admit of any apology, on account of the martial spirit with which they were thought to inspire the spectators, the conduct of Vedius Pollio must have proceeded from the most wanton and brutal cruelty. See **POLLIO**. This man threw such slaves as gave him the slightest offence into his fish ponds to fatten his lampreys; and yet he was suffered to die in peace! The emperor, indeed, ordered his lampreys to be destroyed, and his ponds to be filled up; but we hear of no other punishment inflicted on the savage master. Till the reign of Augustus, the depositions of slaves were never admitted into the courts of judicature; and even then they were received only when persons were accused of treasonable practices. The origin of slavery in Rome was the same as in other countries. Prisoners of war were reduced to that state, as if they had been criminals. The dictator Camillus, one of the most accomplished generals of the republic, sold his Etrurian captives to pay the Roman ladies for the jewels which they had presented to Apollo. Fabius, whose cautious conduct saved his country when Hannibal was victorious in Italy, having subdued Tarentum, reduced 30,000 of the citizens to slavery, and sold them to the highest bidder. Coriolanus, when driven from Rome, and fighting for the Volsci, scrupled not to make slaves of his own countrymen; and Julius Caesar, among whose faults wanton cruelty has never been reckoned, sold at one time 53,000 captives for slaves. Nor did the slaves in Rome consist only of foreigners taken in war. By one of the laws of the XII tables, creditors were empowered to seize their insolvent debtors, and keep them in their houses, till, by their services or labor, they had discharged the sum they owed: and in the beginning of the commonwealth they were authorised to sell such debtors, and even to put them to death. The children of slaves were the property not of the commonwealth, or of their own parents, but of their masters; and thus was slavery perpetuated in the families of such unhappy men as fell into that state, whether through the chance of war or the cruelty of a sordid creditor. The consequence was, that the number of

slaves belonging to the rich patricians was almost incredible. Caius Caecilius Isidorus, who died about seven years before the Christian era, left to his heir 4116 slaves; and if any of those wretched creatures made an unsuccessful attempt to regain his liberty, or was even suspected of such a design, he was marked on the forehead with a red hot iron. In Sicily, during the most flourishing periods of the commonwealth, it seems to have been customary for masters to mark their slaves in this manner; at least such was the practice of Damophilus, who, not satisfied with this security, shut up his slaves every night in close prisons, and led them out like beasts in the morning to their daily labor in the field. Hence arose the servile war in Sicily. Though many laws were enacted by Augustus and other philanthropic emperors to diminish the power of creditors over their insolvent debtors; though the influence of the mild spirit of Christianity tended much to meliorate the condition of slaves, even under Pagan masters; and though the emperor Adrian made it capital to kill a slave without a just reason; yet this infamous commerce prevailed universally in the empire for many ages after the conversion of Constantine to the Christian religion. It was not completely abolished even in the reign of Justinian; and in many countries, which had once been provinces of the empire, it continued long after the empire itself had fallen to pieces.

*Slavery, ancient and modern, in Britain.*—The Anglo-Saxons, after they were settled in this island, seem not to have carried on that traffic so honorably as the Germans. By a statute of Alfred the Great, the purchase of a man, a horse, or an ox, without a voucher to warrant the sale, was strictly forbidden. That law was, doubtless, enacted to prevent the stealing of men and cattle; but it shows us that, so late as the ninth or tenth century, a man, when fairly purchased, was, in England, as much the property of the buyer as the horse on which he rode, or the ox which dragged his plough. In the same country, now so nobly tenacious of freedom and the rights of man, a species of slavery similar to that which prevailed among the ancient Germans subsisted even to the end of the sixteenth century. This appears from a commission issued by queen Elizabeth in 1574, for enquiring into the lands and goods of all her bond-men and bond-women in the counties of Cornwall, Devon, Somerset, and Gloucester, in order to compound with them for their manumission, that they might enjoy their lands and goods as freemen. In Scotland there certainly existed an order of slaves, or bond-men, who tilled the ground, were attached to the soil, and with it were transferrable from one proprietor to another, at a period so late as the thirteenth century; but when or how those villains, as they were called, obtained their freedom, seems to be unknown to every lawyer and antiquary of the present day. Colliers and salters were, in the same country, slaves till within these forty years, that they were manumitted by an act of the British legislature, and restored to the rights of freemen and citizens. See DEWAR. Before that period the sons of colliers could follow no

business but that of their fathers; nor were they at liberty to seek employment in any other mines than those to which they were attached by birth, without the consent of the lord of the manor, who, if he had no use for their services himself, transferred them by a written deed to some neighbouring proprietor.

*Slavery of the ancient Africans.*—That the savage nations of Africa were at any period of history exempted from this opprobrium of our nature, which spread over all the rest of the world, the enlightened reader will not suppose. It is indeed in that vast country that slavery has in every age appeared in its ugliest form. About the era of the Trojan war, a commerce in slaves was carried on between Phœnicia and Lybia: and the Carthaginians, who were a colony of Phœnicians, and followed the customs, manners, and religion of their parent state, undoubtedly continued the Tyrian traffic in human flesh with the interior tribes of Africa. Of this we might rest assured, although we had no other evidence of the fact than what results from the practice of human sacrifices, so prevalent in the republic of Carthage. The genuine instincts of nature are often subdued by dire superstition, but they cannot be wholly eradicated; and the rich Carthaginian, when a human victim was demanded from him to the gods, would be ready to supply the place of his own child by the son of a poor stranger, perfidiously purchased at whatever price. That this was, indeed, a very common practice among them, we learn from the testimony of various historians, who assure us that when Agathocles the tyrant of Syracuse had overthrown their generals, Hanno and Bomilcar, and threatened Carthage itself with a siege, the people attributed their misfortunes to the just anger of Saturn for having been worshipped for some years, by the sacrifices of children meanly born, and secretly bought, instead of those of noble extraction. These substitutions of one offering for another were considered as a profane deviation from the religion of their forefathers; and, therefore, to expiate the guilt of so horrid an impiety, a sacrifice of 200 children of the first rank was on that occasion made to the bloody god. As the Carthaginians were a commercial people we cannot suppose that they purchased slaves only for sacrifices. They undoubtedly condemned many of their prisoners of war to the state of servitude, and either sold them to foreigners, or distributed them among their senators and the leaders of their armies. Hanno, who endeavoured to usurp the supreme power in Carthage whilst that republic was engaged in war with Timoleon in Sicily, armed 20,000 of his slaves to carry his nefarious purpose into execution; and Hannibal, after his decisive victory at Cannæ, sold to the Greeks many of his prisoners whom the Roman senate refused to redeem. That illustrious commander was indeed more humane, as well as more politic, than the generality of his countrymen. Before his days it was customary with the Carthaginians either to massacre their captives in cold blood, that they might never again bear arms against them, or to offer them in sacrifice as a grateful acknowledgment to the gods; but

this was not always done even by their most superstitious or most unprincipled leaders. Among other rich spoils which Agathocles, after his victory, found in the camp of Hanno and Bomilcar, were 20,000 pairs of fetters and manacles, which those generals had provided for such of the Sicilian prisoners as they intended to preserve alive and reduce to a state of slavery. With the ancient state of the other African nations we are but very little acquainted. All the African states were in alliance with one or other of those rival republics; and, as the people of those states appear to have been less enlightened than either the Romans or the Carthaginians, we cannot suppose that they had purer morals, or a greater regard for the sacred rights of man, than the powerful nations by whom they were either protected or oppressed. They would, indeed, insensibly adopt their customs; and the ready market which Marius found for the prisoners taken in Capsa shows that slavery was then no strange thing to the Numidians. It seems indeed to have prevailed through all Africa, from the very first peopling of that unexplored country; and we doubt if in any age of the world the unhappy negro was absolutely secure of his personal freedom, or even of not being sold to a foreign trader.

*Slavery of the Negroes, and modern Africa.*—It is the common opinion that the practice of making slaves of the negroes is of a very modern date; that it owes its origin to the incursions of the Portuguese on the western coast of Africa; and that, but for the cunning or cruelty of Europeans, it would not now exist, and would never have existed. But all this is said by some writers to be a complication of mistakes. Mr. Whitaker, particularly, in his Review of Gibbon's Roman History, is thought to have proved, with a force of evidence which admits of no reply, that from the coast of Guinea a great trade in slaves was carried on by the Arabs some hundreds of years before the Portuguese embarked in that traffic, or had even seen a woolly-headed negro. Even the wandering Arabs of the desert, who never had any friendly correspondence with the Christians of Europe, have from time immemorial been served by negro slaves. ‘The Arab must be poor indeed,’ says M. Saugnier, ‘not to have at least one negro slave. Their wives, who are captive negresses, do all the domestic work, and are roughly treated by the Arabs. Their children are slaves like them, and put to all kinds of drudgery.’ Surely no man, who is not completely prejudiced, will pretend that those roving tribes of Arabs, so remarkable for their independent spirit and attachment to ancient customs, learned to enslave the negroes from the Europeans! They seem to have, without interruption, continued the practice of slavery from the days of their great ancestor Ishmael; and it seems evident that none of the European nations had ever seen a woolly-headed negro till the year 1100, when the crusaders fell in with a small party of them near the town of Hebron in Judea, and were so struck with the novelty of their appearance, that the army burst into a general fit of laughter. Long before the crusades, however, the natives of Guinea had been sold in foreign countries. In 651 the Mahometan Arabs

in Egypt so harassed the king of Nubia or Ethiopia, who was a Christian, that he agreed to send them annually, by way of tribute, a vast number of Nubian or Ethiopian slaves into Egypt. Such a tribute, at that time, was more agreeable to the caliph than any other, ‘as the Arabs then made no small account of those slaves.’ This shows that a commerce in bond-servants could not then be a new branch of trade either to the Arabs or the Ethiopians; but the vast number which the Ethiopian monarch was now compelled to furnish every year induced him to feed this great drain upon his subjects from the natives of the neighbouring countries. He therefore brought the blacks of Guinea, for the first time, into the service and families of the east; and the slaves which he paid in tribute to the Arabs, whether derived from Ethiopia, the Mediterranean regions, or the shores of the Atlantic, were all called Ethiopians, from the country by which they were conveyed into Egypt. ‘At this time, therefore,’ according to Mr. Whitaker, ‘began that kind of traffic in human flesh,

‘ Which spoils unhappy Guinea of its sons.’

But, as a female Ethiopian slave is mentioned in the Eunuch of Terence, we suspect that Guinea was occasionally ‘spoiled of its sons’ at a much earlier period. At any rate, from the observations made by the European travellers who first penetrated into that continent, it appears undeniable that slavery must have prevailed from time immemorial among such of the tribes as had never carried on any commerce with foreign nations. In fact, this kind of commerce prevailed in Africa so early as in the reign of Jugurtha. That it was not introduced among the negroes either by the Arabs or by the Portuguese appears still more evident from the behaviour of the Dahomans at the conquest of Whidah, and from the manner in which the people of Angola, at the earliest stage of their foreign trade, procured a supply of slaves for the Portuguese market. The greater part of the slaves, whom the Angolans exported from St. Paulo de Loanda, were brought from interior countries, some hundreds of leagues distant, where they could not have been regularly purchased, had that commerce been till then unknown. The Dahomans, till 1727, had never seen a white man; and when their prince and his army first met with some Europeans, in the town of Sabi, they were so shocked at their complexion and their dress that they were afraid to approach them, and could not be persuaded that they were men till they heard them speak, and were assured by the Whidanese that these were the merchants who purchased all the slaves that were sold in Guinea. We are assured by Snelgrave, who was then in the army, that those people treated their captives with such horrid cruelty as was shocking to the natives of the sea coast. A great part of their prisoners were sacrificed to their gods, or eaten by the soldiers; and when our author expressed to a colonel of the guard some surprise that a prince so enlightened as the sovereign of Dahomy should sacrifice so many men whom he might have sold to great advantage, he was told that it had been the custom of their nation, from time immemorial, to offer, after victory, a certain

number of prisoners to the gods; and that they selected the old men for victims, because they were of less value at market, and more dangerous from their experience than the young men. One of the kings of Dahomy slaughtered at once not only all the captives taken in war, but also 127 prisoners of different kinds, that he might have a sufficiency of skulls to adorn the walls of his palace; though at the very time of that massacre he knew that there were six slave ships in the road of Whidah, from which he could have got for every prime slave a price little short of £30 sterling.—Daizel's History of Dahomy. These facts, and others which the reader will find detailed in the Modern Universal History, vol. xiii., by writers who were at the greatest pains to procure authentic information—who were neither biased by interest nor blinded by enthusiasm, and who held the infamous traffic in utter abhorrence, are alleged as proving, beyond the possibility of doubt, that slavery must have prevailed among all the negro nations before they were visited either by the Portuguese or by the Arabs. These two nations may indeed have been the first who dragged the unhappy negro from his native continent, and made his slavery doubly severe, by compelling him to labor, without his own consent, for masters whom he hardly considered as human beings. On this commerce, and the dreadful cruelty with which it has been carried on to the present day, it is impossible to reflect without horror: see our article SLAVE-TRADE: and there may be some consolation, however small, in believing that its original authors were not Europeans. The purchase of Guinea blacks for slaves, by foreign nations, does seem to have commenced ages before the Portuguese had laid that country open to the intercourse of Europe. Even after they had made many incursions into it, the inhabitants were as regularly purchased for slaves by some of the adjoining states as they are now by the maritime Europeans. In the French West India islands, before the late revolution in the mother country, the condition of the negro slaves was better than that of the bond men among the ancient Germans.—See Ramsay's Essay, sect. V.

**SLAUGHTER**, *n. s. & v. a.* Saxon, on-  
**SLAUGHTERHOUSE**, *n. s.* *flaugh*, from  
**SLAUGHTERMAN**, *n. s.* *flægan*, ple-

**SLAUGHTEROUS**, *adj.* *gan*, to strike or kill. Massacre; destruction by the sword: to massacre, slay: a slaughterhouse is applied particularly to the building in which beasts are slain by a butcher.

Sinful Macduff,  
They were all struck for thee!  
Not for their own demerits, but for mine,  
Fell slaughter on their souls. *Shakspeare. Macbeth.*

Your castle is surprised, your wife and babes  
Savagely slaughtered. *Id.*

Away with me, all you whose souls abhor  
The' uncleanly savour of a slaughter-house;  
For I am stitied with the smell of sin. *Shakspeare.*

The mad mothers with their howls confused  
Do break the clouds; as did the wives of Jewry,  
At Herod's bloody hunting slaughterman. *Id.*

I have supt full with horrors:  
Direness familiar to my slaughterous thoughts  
Cannot once start me. *Id. Macbeth.*

On each hand *slaughter* and gigantick deeds.

*Milton*

Of warlike engines he was author,  
Devised for quick dispatch of *slaughter*. *Hudibras.*

The pair you see,

Now friends below, in close embraces join;  
But, when they leave the shady realms of night,  
With mortal hate each other shall pursue:  
What wars, what wounds, what *slaughter* shall ensue!

*Dryden.*

**SLAVI** (from slab, Slavonic, i. e. illustrious),  
the ancient inhabitants of Slavonia.

**SLAY**, *v. a.* *Preterite* slew; *part. pass.*

**SLAYER**, *n. s.* *slain*. Sax. *flean*; Goth. *slahan*; Swed. *sla*. To kill; butcher; put to death: a killer; destroyer; murderer.

*Slay* and make ready. *Gen. xlvi. 16.*

Wrath killeth the foolish man and envy slayeth the silly one. *Job v. 2.*

The *slain* of the Lord shall be many.

*Isaiah lxvi. 16.*

I saw under the altar the souls of them that were slain for the word of God. *Rer. vi. 2.*

Witness the guiltless blood poured oft on ground;  
The crowned often slain, the *slayer* crowned.

*Faerie Queene.*

Her father's brother

Would be her lord; or shall I say her uncle?  
Or he that *slew* her brothers and her uncle?

*Shakspeare. Richard III.*

Tyrant, shew thy face:  
If thou be'st *slain*, and with no stroke of mine,  
My wife and children's ghosts will haunt me still.

*Shakspeare.*

They *slew* those that were *slayers* of their country-men.

*Abbot.*

The king grew vain,  
Fought all his battles o'er again;  
And thrice he routed all his foes, and thrice he *slew* the *slain*.

*Dryden.*

The *slayer* of himself yet saw I there:  
The gore congealed was clotted in his hair:  
With eyes half closed and gaping mouth he lay,  
And grim as when he breathed his sullen soul away.

*Id.*

He must by blood and battle's power maintain,  
And *slay* the monarchs ere he rule the plain. *Prior.*

**SLEAFORD**, New, a flourishing market town of Lincolnshire, pleasantly situated on the Slea, which rises in the vicinity, and soon joins the Witham. The church is a handsome, spacious, Gothic structure. It appears to have been built in the year 1271 by Roger Blunt and Roger Brickham of Sleaford, merchants. It consists of a chancel, nave, transept, and two aisles, with a tower crowned by a spire, which rises to the height of 144 feet. In the chancel are several monuments to the family of Carr, by one of whom a free school was erected and endowed in 1603, and also an hospital for twelve poor men. Opposite the west front is the market-place. There was once a castle at Sleaford, built in the year 1112 by Alexander, bishop of Lincoln. This castle was standing in Leland's time, and is described by him; it is now levelled with the ground. Many Roman coins have been found here of the family of Constantine; and from this and other circumstances Dr. Stukeley conjectures that this was a Roman town. Market on Monday, well supplied with provision of all sorts. Sixteen miles south of Lincoln, and 116 north of London.

**SLEAVE**, *n. s.* Of this word I know not well the meaning : sleave silk is explained by Gouldman, *flocus sericus*, a lock of silk ; and women still say sleave the silk, for untwist it. Ainsworth calls a weaver's shuttle or reed a slay. To slay is to part a twist into single fibres.—Dr. Johnson. The doctor's idea is correct : the Goth. and Swed. *sla* has been both applied to the weaver's reed, and to beat the wool.

I on a fountain light,  
Whose brim with pinks was platted ;  
The banks with daffadillies digit  
With grass like *sleave* was matted.

*Drayton. Cynthia.*

**SLED**, *n. s.* { Saxon, *fleeg*; Goth. and Swed'DED, *adj.* Swed. *slad*; Belg. *sldege*.

**SLEDGE**, *n. s.* { Goth. and Isl. *sleggia*. A low carriage without wheels : a large heavy hammer. The two noun substantives have been confounded

The painful smith, with force of fervent heat,  
The hardest iron soon doth mollify,

That with his heavy *sledge* he can it beat,  
And fashion to what he it list apply. *Spenser.*

So frowned he once when in an angry parle,  
He smote the *sledged* Polack on the ice. *Shakspeare.*

The sled, the tumbril, hurdles, and the stail,  
These all must be prepared. *Dryden.*

It would follow that the quick stroke of a light hammer should be of greater efficacy than any softer and more gentle striking of a great *sledge*. *Wilkins's Mathematical Magick.*

In Lancashire they use a sort of *sledge*, made with thick wheels, to bring their marl out, drawn with one horse. *Mortiawr's Husbandry.*

The uphand *sledge* is used by under workmen, when the work is not of the largest, yet requires help to batter and draw it out : they use it with both their hands before them, and seldom lift their hammers higher than their head. *Moxon.*

**SLEDGE ISLAND**, a small island in the North Pacific Ocean, on the north-western shore of America. It is about four leagues in circuit. Captain Cook says, ‘ The surface of the ground is composed chiefly of large loose stones, that are in many places covered with moss and other vegetables, of which there were above twenty or thirty different sorts, and most of them in flower. But I saw neither shrub nor tree, either upon the island, or on the continent. On a small low spot, near the beach where we landed, was a good deal of wild purslain, pease, long-wort, &c.; some of which we took on board for the pot. We saw one fox; a few plovers, and some other small birds; and we met with some decayed huts that were partly built below ground. People had lately been on the island : and it is pretty clear that they frequently visit it for some purpose or other, as there was a beaten path from the one end to the other. We found, a little way from the shore where we landed, a sledge, which occasioned this name being given to the island. It seemed to be such a one as the Russians in Kamtschatka make use of to convey goods from place to place, over the ice or snow. It was ten feet long, twenty inches broad, and had a kind of rail-work on each side, and was shod with bone. The construction of it was admirable, and all the parts neatly put together; some with wooden pins, but mostly with thongs or lashings of whalebone, which made me think

it was entirely the workmanship of the natives Long. 193° 57' E. lat. 64° 30' N.

**The SLEDGE** is to be used with both hands ; of this there are two sorts, the up hand sledge, described by Moxon ; and the about sledge, which is used for battering or drawing out the largest work, and is held by the handle with both hands, and swung round over their heads, at their arms' end, to strike as hard a blow as possible.

**The SLEDGE** is used for the conveyance of very weighty things, as huge stones, bells, &c. The sledge for carrying criminals, condemned for high treason, to execution, is called hurdle. The Dutch have a kind of sledge on which they can carry a vessel of any burden by land. It consists of a plank of the length of the keel of a moderate ship, raised a little behind, and hollow in the middle ; so that the sides go a little aslope, and are furnished with holes to receive pins, &c. The rest is quite even.

**SLEEK**, *n. s. & v. a.* { Goth. and Swed.

**SLEEKLY**, *adv.* { *slek*; Belgic, *slych*.

**SLEEKSTONE**, *n. s.* { Smooth; glossy; soft: to make so : the adverb corresponding : sleek-stone means a stone used for this purpose.

How eagerly ye follow my disgrace,  
As if it fed ye ; and how sleek and wanton  
Y' appear in ev'ry thing may bring my ruin. *Shakspeare.*

Gentle, my lord, *sleek* o'er your rugged looks ;

Be bright and jovial 'mong your guests to night. *Id.*

Let their heads be *sleekly* combed, and their blye coats brushed. *Id. Taming of the Shrew.*

What time the groves were clad in green,

The fields all drest in flowers,

And that the *sleek*-haired nymphs were seen

To seek them summer bowers. *Dragton.*

Yet are the men more loose than they,

More kembed, and bathed, and rubbed, and trimmed,  
More *sleeked*, more soft, and slacker limbed. *Ben Jonson.*

She does *sleek*  
With crumbs of bread and milk, and lies a-nights

In her neat gloves. *Id. Catiline.*

The purest paste-board with a *sleekstone* rub smooth, and as even as you can. *Peacham.*

As in gaze admiring, oft he bowed

His turret crest, and *sleek* enamelled neck.

Fawning. *Milton's Paradise Lost.*

By dead Parthenope's dear tomb,

And fair Ligea's golden comb,

Wherewith she sits on diamond rocks

*Sleeking* her soft alluring locks. *Id.*

The persuasive rhetorick

That *sleeked* his tongue, and won so much on Eve  
So little here, nay lost. *Id.*

A sheet of well *sleeked* marble paper did not cast any of its distinct colors upon the wall. *Boyle.*

So *sleek* her skin, so faultless was her make,  
Ev'n Juno did unwilling pleasure take

To see so fair a rival. *Dryden.*

A cruise of fragrance formed of burnished gold,  
Odour divine ! whose soft refreshing streams  
*Sleek* the smooth skin, and scent the snowy limbs. *Pope.*

**SLEEP**, *v. n. & n. s.* { Sax. *sleepan*; Goth.

**SLEEP'ER**, *n. s.* { *sleepan*; Belg. *slaepen*.

**SLEEP'LY**, *adv.* { To take rest, by sus-

**SLEEP'INESS**, *n. s.* { pension of many of

' **SLEEP'LESS**, *adj.* { the mental and corpo-

**SLEEP'Y**, *adj.* { ral powers: hence to

rest in any way; be idle; inattentive; live thoughtlessly; be dead: the noun substantive and all the derivatives follow these senses.

If the man be poor, thou shalt not sleep with his pledge. *Deuteronomy.*

If we believe that Jesus died and rose again, even so them also which sleep in Jesus will God bring with him. *1 Thess.*

Methought I heard a voice cry, Sleep no more! Macbeth doth murder sleep; the innocent sleep; Sleep, that knits up the ravelled sleeve of care; The birth of each day's life, sore labour's bath, Balm of hurt minds, great nature's second course, Chief nourisher in life's feast.

*Shakspeare. Macbeth.*

Steel, if thou turn thine edge, or cut not out the burley-boned clown in chines of beef ere thou sleep in thy sheath, I beseech Jove on my knees thou mayest be turned into hobnails. *Id. Henry VI.*

How sweet the moonlight sleeps upon this bank! Here will we sit, and let the sounds of musick Creep in our ears. *Id. Merchant of Venice.*

Heaven will one day open The king's eyes, that so long have slept upon This noble bad man. *Id. Henry VIII.*

You ever Have wished the sleeping of this business, never Desired it to be stirred. *Id.*  
Sound, musick; come, my queen, take hand with me, And rock the ground whereon these sleepers be. *Shakspeare.*

What's the business, That such an hideous trumpet calls to parley The sleepers of the house? *Id. Macbeth.*

Why did you bring these daggers from the place? They must lie there. Go, carry them, and smear The sleepy grooms with blood. *Id.*

I rather chuse to endure the wounds of those darts which envy casteth at novelty, than to go on safely and sleepily in the easy ways of ancient mistakings. *Raleigh.*

Cold calleth the spirits to succour, and therefore they cannot so well close and go together in the head, which is ever requisite to sleep. And, for the same cause, pain and noise hinder sleep; and darkness furthereth sleep. *Bacon.*

Let penal laws, if they have been sleepers of long, or if grown unfit for the present time, be by wise judges confined in the execution. *Id.*

That sleepe might sweetly scale His restfull eyes, he entered, and in his bed In silence took. *Chapman.*

Peace, good reader! do not weep;

Peace, the lovers are asleep:

They, sweet turtles! folded lie

In the last knot that love could tie.

Let them sleep, let them sleep on,

Till this stormy night be gone,

And the eternal morrow dawn;

Then the curtains will be drawn,

And they waken with that light

Whose day shall never sleep in night. *Crasshaw.*

Let such bethink them, if the sleepy drench Of that forgetful lake benumb not still. *Milton.*

The field

To labour calls us, now with sweat imposed, Though after sleepless night. *Id. Paradise Lost.*

The giddy ship, betwixt the winds and tides Forced back and forwards, in a circle rides, Stunned with the different blows; then shoots amain,

Till counterbuffed she stops, and sleeps again. *Dryden.*

She waked her sleepy crew, And rising hasty, took a short adieu. *Id.*

Hermes o'er his head in air appeared, His hat adorned with wings disclosed the god, And in his hand the sleep compelling rod.

Night is indeed the province of his reign; Yet all his dark exploits no more contain Than a spy taken, and a sleeper slain. *Id.*

Infants spend the greatest part of their time in sleep, and are seldom awake but when hunger calls for the teat, or some pain forces the mind to perceive it. *Locke.*

Those who at any time sleep without dreaming, can never be convinced that their thoughts are for four hours busy without their knowing it. *Id.*

He must be no great eater, drinker, nor sleeper, that will discipline his senses, and exert his mind; every worthy undertaking requires both. *Grew.*

A person is said to be dead to us, because we cannot raise from the grave; though he only sleeps unto God, who can raise from the chamber of death. *Ayliffe's Parergon.*

We sleep over our happiness, and want to be roused into a quick thankful sense of it. *Attterbury.*

He would make us believe that Luther in these actions pretended to authority, forgetting what he had sleepily owned before. *Id.*

Watchfulness precedes too great sleepiness, and is the most ill-boding symptoms of a fever. *Arbuthnot.*

While pensive poets painful vigils keep, Sleepless themselves to give their readers sleep. *Pope.*

Silence; coeval with eternity, Thou wert ere nature first began to be, Twas one vast nothing all, and all slept fast in thee. *Id.*

I slept about eight hours, and no wonder, for the physicians had mingled a sleepy potion in the wine. *Gulliver.*

SLEEP, in physiology, is that state of the body in which, though the vital functions continue, the senses are not affected by the ordinary impressions of external objects. See DREAMS, MEDICINE, INDEX, and PHYSIOLOGY.

'General sleep,' says Bichat, 'is the assemblage of particular sleeps. It is derived from that law of the animal life which causes in its functions a constant succession of periods of activity, and times of intermission; a law which pointedly distinguishes it from the organic life. Hence sleep influences the latter only in an indirect way, while it exerts its full operation on the former.' There is something very just and original, as it seems to us, in this notion, we therefore continue our extract.

'Numerous varieties may be remarked in this periodic state, to which all animals are exposed. The most complete sleep is that in which the whole external life, that is, the senses, perception, imagination, memory, judgment, locomotion, and the voice, are suspended; the least perfect affects only a single organ. We see numerous gradations between these two extremes; sometimes the senses, perception, locomotion, and the voice, are suspended; imagination, memory, and judgment remaining active; sometimes locomotion and the voice are added to the latter. Such is the sleep which is agitated by dreams. A portion of the animal life still continues active, having escaped the torpidity in which the rest is plunged. Three or four senses

only may have passed into the state of repose, and ceased to be influenced by external objects; then that kind of somnambulism occurs in which to the action of the brain, the muscles, and the larynx, are added those of hearing and touch, often in a very distinct form.

' Let us then no longer regard sleep as a constant state, invariable in its phenomena. Scarcely do we sleep twice together in the same way; a multitude of causes modifies this condition of our being, by applying to a greater or smaller portion of the animal life the general law of intermittent action. The various modifications must be characterised by the functions, which are affected in different instances. The principle is the same throughout, from the simple relaxation, which follows the contraction of a voluntary muscle, to the entire suspension of the animal life. Sleep is in all cases a consequence of that general law of intermission which exclusively characterises this life, but the application of which to the various external functions varies infinitely. This explanation of sleep is undoubtedly very different from those narrow systems which place its cause in the brain, the heart, the large vessels, the stomach, &c., and thus present an insulated phenomenon, often illusory, as the basis of one of the great modifications of life.

' Why do light and darkness, in the natural order of things, correspond respectively to the activity and repose of the external functions? Because, during the day, the animal is surrounded with a multitude of exciting causes; a thousand things exhaust the powers of the sentient and locomotive organs, fatigue them, and thus prepare a relaxation, which is favored at night by the absence of all stimuli. Thus, in the modern way of life, in which this order is partly inverted, we assemble round us, during the night, various stimuli, which prolong the state of watchfulness, and make the intermission of the animal life coincide with the first hours of the dawn, favoring it by removing all circumstances that might produce sensations. By multiplying around them causes of excitation, we can, for a certain time, prevent the organs of the animal life from obeying the law of intermission; but they yield at last, and nothing, after a certain time, can suspend its influence. Exhausted, by continued exertion, the soldier sleeps at the side of the cannon, and the criminal even amid the tortures of the question.

' Let us, however, distinguish natural sleep, the consequence of fatigue of the organs, from that which is caused by affections of the brain, as apoplexy, or concussion. In the latter case the senses are awake, they receive impressions, and are affected by them as usual; but these impressions cannot be perceived by the disordered brain, and we, consequently, are not conscious of them. In sleep, on the contrary, the intermission of action affects the senses as much, and even more than the brain.'—*Recherches Physiol. sur la Vie et la Mort*, p. 34—37.

Sound sleep is much less common than that which is interrupted by dreams, in which a series of sensations, perceptions, and reflections, passes

through the mind, as in the waking state. We are conscious of the same kind of transactions as occupy our waking hours; we see, hear, walk, talk, and perform all the customary offices of life. The mind reasons, judges, performs volition, and experiences the various affections, as love, hatred, indignation, anxiety, fear, joy, even in a much more lively degree, than when they are excited by their real causes. In dreaming, as in the soundest sleep, the action of the external senses is suspended; but the internal faculties are active in greater or less number. Volition takes place, but the muscles do not obey the will. That dreaming is a less sound species of sleep appears from the familiar fact, which has probably been observed by every individual; viz. that the first sleep is much freer from it than the second. We retire to rest, fatigued by the exertions of the day, and sleep soundly for five or six hours; we wake, and then fall asleep again towards the morning, and dream the whole time of this second sleep. Haller, who mentions that he had attended much to his dreams, observes, that in perfect health he remembered only the sensation of flying through the air, conceiving himself suspended above the earth and carried to a distance.

The order of the images and reflections, which pass through our minds in sleep, and the laws of their succession and connexions, are the same as when we are awake. We must observe, however, that these internal processes now go on by themselves, and are not corrected by that reference to external objects, and that exercise of the external senses, which takes place in the waking state. Thus we see a friend long dead, without being aware that he is not alive; and gross inconsistencies and absurdities take place without being remarked. The great activity of the imagination and judgment, in the act of dreaming, is evident from the nature of many dreams. 'Often,' says Haller, 'in my dreams, I seem to read books, printed poems, histories of travels, &c.; and I even see the plants of distant regions, suited to their climates.' Others solve problems, write, make verses, &c. The reasonings which are carried on in sleep, the speeches which are made, &c., are often more quickly and easily performed than when we are awake. See DREAMS.

Some horses sleep standing; and the lower jaw is maintained elevated in us during sleep. The hand is often raised when any stimulus is applied to the body, although it may not be strong enough to interrupt sleep. The fact of children expelling their urine, when the pot is brought to them, has been already noticed. Many persons laugh, weep, sigh, and talk in their sleep: the words are indeed generally indistinctly pronounced, and the sentences incomplete.

*Somnambulism* differs from these only in degree. The sleep-walker executes the voluntary motions, which arise out of the mental processes carried on in sleep. It would be endless to recount the particular cases belonging to this subject. It is sufficient to mention that individuals rise from bed asleep, and with their eyes

closed, and not only walk about the room or house, going up or down stairs, finding their way readily, and avoiding obstacles, but pass safely through very dangerous places, as windows, or on the roofs of houses. They execute, too, still more difficult feats. They dress themselves, go out of doors, light a fire, undress and bathe, saddle and bridle a horse, ride, write, make verses, and execute all the actions of life correctly, and even sometimes acutely. During this time they are asleep; the eyes are shut, or do not see if open; the iris is not irritable. When awakened, which is sometimes not easily effected, they do not remember what they have done.'

The proportion of time passed in sleep differs in different individuals, and at different ages. From six to nine hours may be reckoned about the average proportion. Men of active minds, whose attention is engaged in a series of interesting employments, sleep much less than the listless and indolent; and the same individual will spend fewer hours in this way, when strongly interested in any pursuit, than when the stream of life is gentle and undisturbed. The great Frederic of Prussia, and John Hunter, who devoted every moment of their time to the most active employments of body and mind, generally took only four or five hours sleep. A rich and lazy citizen, whose life is merely a chronicle of breakfasts, dinners, suppers, and sleep, will slumber away ten or twelve hours daily. When any subject strongly occupies us, it keeps us awake in spite of ourselves. These phenomena are consistent with what we have already said; the animal organs, when the period of their intermission and repose has arrived, are kept in activity by new and unusual causes of excitation, and thus the ordinary period of sleep may be passed over, and its ordinary quantity much diminished. When a person, who has thus been kept long awake by the occupation of his mind with important and urgent subjects, at last falls asleep, the slightest irritation calls up in the fancy all the trains of thought which have just occupied us, and sets at work again all the internal machinery which has hardly yet become quiet; the sleep, under such circumstances, is imperfect, and much disturbed by dreaming.

The ordinary period of sleep may be protracted by unusual excitation; but the effect is lost after a certain time, and sleep comes on under circumstances which appear at first most unfavorable to it. An eye-witness reports, that some boys, completely exhausted by exertion, fell asleep amid all the tumult of the battle of the Nile; and other instances are known of soldiers sleeping amid discharges of artillery, and all the tumult of war. Couriers are known to sleep on horseback, and coachmen on their coaches. A gentleman, who saw the fact, reported to the writer of this article that many soldiers, in the retreat of Sir John Moore, fell asleep on the march, and continued walking on. Even stripes and tortures cannot keep off sleep beyond a certain time; but it then indicates the greatest exhaustion, and consequently affords an unfavorable prognosis. Noises at first prevent us from sleeping, but their influence soon ceases, and

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persons rest soundly in the most noisy situations. The proprietor of some vast iron-works, who slept close to them, through the incessant din of hammers, forges, and blast-furnaces, would awake if there was any interruption during the night: and a miller, being very ill and unable to sleep, when his mill was stopped on this account, rested well and recovered quickly when the mill was set a going again.

Hunger will prevent sleep; and cold affecting a part of the body has the same effect. These causes operated on the unfortunate women who lived thirty-four days in a small room overwhelmed by snow, and with the slightest sustenance: they hardly slept the whole time. (*Somis Ragionamento sopra un fatto avvenuto in Bergamoletto, &c., p. 74.*) Indigestion also, and various bodily affections, produce sleeplessness.

One of the latest theories that has appeared upon this subject has been offered to the world by the late Dr. Mason Good in a note appended to his translation of Lucretius, b. iv. v. 936, and on this occasion, as well as on account of what we believe to be its perfectly satisfactory result, we are glad in having an opportunity of presenting it to our readers: the more especially as it undertakes to unfold the very obscure and hitherto perplexing doctrine of dreaming. It is offered to us for the sake of conciseness under the following lemmata:—

I. All the fibrils of the nervous system become fatigued, exhausted, and torpid, in proportion to the length and violence of their exertion, and recover their power alone by rest. The weariness and debility of the muscles of the arms and legs, after extreme exercise, or exercise to which they have not been accustomed, may be adduced as a sufficient proof of this position. The nervous fibrils of the external organs of sense are necessarily subject to the same effect; we neither hear, nor see, nor taste, nor feel, with the same accuracy, after any or all these various organs have been long upon the full stretch of action, with which we do on their first exertion in the morning. Increase or prolongate their action, and their power will be still farther obtunded, till at length, like an over-wearied limb, they become perfectly lethargic, and give no account of whatever is occurring around us; and it is this uniform lethargy, torpidity, or inaction of all the external senses, which we denominate sleep. By the exercise of the will, or any other strong stimulus, this sleep, or sensorial torpidity, may be postponed: and vice versa, by the consent of the will, it may be expedited.

II. The vital organs are far less subject to the influence of stimulants of every kind than the organs of external sense: their actions are hence far more equable and permanent; they are seldom wearied or exhausted, and, of course, seldom sleep or become torpid. From the application of very strong stimulants, however, whether external as those of severe pain or labor, or internal, as those of disease or excessive grief, such fatigue or exhaustion actually takes place; and when the exhaustion is complete, they also, like the organs of external sense, sleep or become torpid: in other words, death ensues, and the spirit separates from the body. The resemblance

between death and sleep, therefore, is not less correct, upon the principles of physiology, than it is beautiful among the images of poetry. Sleep is the death or torpidity of the organs of external sense, while the vital functions continue their accustomed actions: death is the sleep or torpidity of the whole.

III. Every organ of the animal frame recovers from its fatigue or torpidity by rest, provided the principle of life, that is to say, the action of the vital organs, continues. Hence the organs of external sense, in a definite period of time, and a period generally proportioned to the degree of their exhaustion, re-acquire their accustomed vigor, are alive to the influence of their appropriate stimulants, and the smallest excitement applied to any one of them, throws the whole once more into action: in other words the man awakes from sleep, he rouses himself from the temporary death of the organs of external sense. Were it possible for life to continue during a total rest or torpidity of the vital organs, as it does during that of the organs of external sense, there is no doubt that these also would, in time, recover from their exhaustion, and that the man would, in like manner, awake from the total torpidity, the sleep or death of the entire frame: but this is impossible; the soul has now deserted the body: a change in every organ ensues, and the whole system, instead of reviving, becomes a prey to corruption and ruin.

IV. When the organs of external sense have recruited themselves by repose, the stimulus that rouses the one, rouses, at the same time, the rest, from the habit of association. From the same habit the torpidity produced by exhaustion, in any single organ, is propagated through every other, and the sleep becomes common to the whole: although it is also unquestionable that the whole are also fatigued, or partially exhausted, from the fact that the general stock of sensorial power has been borrowed, in a considerable degree, from the rest, and expended at a single outlet.

V. The nervous fibrils, or rather tubules of the external organs of sense, are equally affected, and of course become equally exhausted, whether the stimulus be applied at either end; to wit, the end terminating externally, or that connected with the brain; and hence, internal excitements, as those of severe study, intense grief, undue eating and drinking, or febrile diseases, produce the same effect as causes operating from without.

VI. In either case the sleep or torpidity produced is sound or healthy, under a certain degree of exhaustion alone: hence mankind sleep most refreshingly after moderate or accustomed fatigue, moderate or accustomed study, moderate or accustomed meals.

VII. If the stimulus be a little increased beyond this medium, the vital organs themselves become affected, an undue and morbid proportion of sensorial power is secreted, which postpones the torpidity or sleep for the present, but at the expense of the general strength of the whole system, which, in consequence, becomes gradually more exhausted and debilitated: whence a far deeper torpidity, or sleep, must necessarily ensue at length, than would have occurred in the first

instance. If such torpidity take place before the vital organs are totally exhausted, it is confined to the external organs of sense alone, which hereby progressively recover their accustomed activity and vigor: if the vital organs be themselves altogether exhausted before the torpidity ensues, it is propagated to themselves, and the consequent sleep is the sleep of death. Violent and long continued labor, as an external stimulus, violent and long continued study, violent and continued fevers, violent and continued grief, a very inordinate debauch, as internal stimuli, are equally liable to produce effects here specified: and the one or the other will take place in proportion to their excess and extremity.

VIII. If the stimulus affecting the external organs of sense, at which end soever it be applied, be intolerably pungent or forcible, the sensorial power is exhausted immediately, and the organ directly affected becomes instantly torpid. Hence sounds, insufferably loud, make us deaf; excessive light makes us blind; acrimonious smells, or savors, render us incapable of smelling or tasting; and hence an abrupt shock of joy or grief, a sudden and intense paroxysm of fever, large quantities of wine or spirits, as internal causes, produce coma, palsy, apoplexy, which are only so many modifications of the sleep or torpidity of the nervous tubules of the external organs of sense. If the same abrupt and violent cause be sufficiently powerful to act upon the vital organs as well as those of external sensation, the torpidity becomes universal, and the sleep induced is once more the sleep of death.

IX. As violent stimulants produce sudden and irrecoverable torpidity, either general or local, according to the mode and place of application, stimulants less violent induce a tendency to the same effect. Hence the nostrils, not accustomed to snuff, are more forcibly agitated by its application than those that are so; the eyes of persons accustomed to sleep in the glare of the sun find no inconvenience from exposure to the light of the morning; while those who always sleep in total darkness are awake by the return of day-light. And so of the rest.

X. On this account a very small portion of light, of sound, or of exercise, even the breath of the air alone, are each of them powerful stimulants upon infants, because unaccustomed to them: hence they sleep much and soundly; so soundly, indeed, that no common stimulus is able, for a long time, to arouse them from their torpidity. In other words, it requires a period of many hours for the external organs to recover from their exhaustion. The smallest undulatory motion in the uterus, and the very action of the vital organs themselves, are, perhaps, sufficient to wear out, from time to time, the sensorial power of the fetus on its first formation: and hence the fetus sleeps, with few intermissions, through the whole period of parturition.

XI. For the same reason persons in an advanced age are far less impressed by common stimulants than in any former period of their lives: from a long series of exposure to their operation their organs are become more torpid, and hence they require less sleep, and, at the same time, less food. The vital organs, as well

as those of external sense, partake of the same disposition. They are, in consequence, less liable to all violent or inflammatory disorders : but, the general torpidity increasing, the heart is stimulated with great difficulty ; a smaller portion of sensorial power is secreted from the gases of the atmosphere ; a smaller portion of food is thrown into the system from the stomach ; the pulse, and every other power, gradually declines, till, at length, if ever man were to die of old age alone, he would die from a total torpidity, or paralysis of the heart. But debilitated or torpid as every organ is become, long before such a period can arrive, the frame at large is incapable of resisting the smallest of those trivial shocks to which man is daily exposed, either internal or external ; or, in other words, there is no accumulation of sensorial power to supply the temporary demand, and the man dies from sudden exhaustion rather than from progressive paralysis.

Upon this theory I might easily and obviously solve a variety of problems which have hitherto eluded all satisfactory explanation. I shall only add to this outline of the theory of sleep a few observations upon that of dreaming, which is so intimately connected with it, as well in nature as in the poem before us.

I. A certain but a very small degree of stimulus applied, perhaps, to any nerve whatever of the human body, instead of exhausting it seems to afford it pleasure ; or, at least, the nerve is able to endure it without becoming torpid, or, which is the same thing, requiring sleep or rest. The orbicular motion of the lips, to an infant accustomed to suck, is a source of so much comfort, and attended with so little exhaustion, that, whether sleeping or waking, it will generally be found mimicking the act of sucking, when at a distance from its nurse, and perhaps not thinking of such action itself. A person who, from habit, has acquired a particular motion of any one of his limbs, a twirl of the fingers, or a swinging one leg over the other, perseveres in such motion from habit alone, and feels no torpidity or exhaustion in the nerves that are excited, although it might be intolerably fatiguing to another who has never acquired the same custom.

II. It is probable that both thought and the action of the vital organs are stimulants of this precise character, if not in their commencement, at least very shortly afterwards : that nearly, if not altogether, from the first they are equally pleasing and gentle in their degree of action ; and that hence they equally, also, continue without exhausting us, except when unduly roused ; and form a habit too pertinacious and invincible to be broken through by any exertions whatever.

Thought is, then, to the brain, that which the muscular habits I have just spoken of are to the muscles which are the subjects of them. Both continue alike, whether we be reflecting upon the action, or whether we be not : but the habit of thinking is so much older, and, consequently, so much deeper rooted than that of any kind of gesticulation, that, as I have just observed, it is impossible for us to break through it by the utmost efforts of the will : whence it accompanies us, excepting when the brain is totally exhausted, and consequently thrown into a profound tor-

pidity or sleep, not only at all times when awake, but almost at all times during sleep, and is the immediate and necessary cause of our dreaming.

III. Thought can only be exercised upon objects introduced into the brain, or general sensorium, by the organs of external sensation ; and hence the bent or chief direction of our thoughts, whether sleeping or waking, must be derived from those objects which principally impress us, be the causes of such impression what they may. The train of thoughts, then, which recurs from habit alone, as in sleep or total retirement from the world, must generally be of this description ; in the former case, however, by no means correctly or perfectly, because there are others, also, which have a tendency to recur, and neither the will nor the senses are in action to repress them ; whence proceeds a combination of thoughts or ideas, sometimes in a small degree incongruous, and at other times most wild and heterogeneous ; occasionally, indeed, so fearful and extravagant as to stimulate the senses themselves into a sudden renewal of their functions ; and, consequently, to break off abruptly the sleep into which they were thrown.

IV. If the action of the nervous tubules of the brain, thus continued from habit, and producing our dreams, be less powerful during sleep than is sufficient to rouse the senses generally, it may, nevertheless, at times be powerful enough to excite into their accustomed exercise the muscles of those organs or members which are more immediately connected with the train of our dreams, or incoherent thoughts, while, nevertheless, every other organ or member still remains torpid. Hence some persons talk, and others walk in their sleep, without being apprised, on their wakening, of any such occurrence.

V. Whatever be the set of nerves that have chiefly become exhausted from labor or stimulus of the day, the rest, as I have already noticed, partake of the same torpidity from long habit of association ; exhausted in some degree, also, themselves by the portion of sensorial power which, as from a common stock, they have contributed towards the support of the debilitated organ. But it sometimes happens, either from disease or peculiarity of constitution, that all the external organs of sense do not associate in their actions, or yield alike to the general torpidity of the frame ; and that the auditory, the optical, or some other set of nerves, are in vigor, while all the other nerves of the external senses remain torpid ; as it may do also, that an entire organ of external sense, like the muscles of an individual member, as observed in the last paragraph, may be awoke or restimulated into action by the peculiar force and bent of the dream, while all the rest continue lethargic.

VI. If the organ of external sense thus affected be that of hearing, a phenomenon will occur, which is specifically noted by our poet in book V., v. 1182, but which, I believe, has never hitherto been satisfactorily explained ; the dreamer must necessarily hear a bye-stander who speaks to him ; and if, from the cause specified above, he should happen to have talked in his sleep, so as to give the bye-stander some clue into the train of thoughts of which his

dream is composed, a conversation may be maintained, and the bye-stander by dexterous management, and the assumption of a character which he finds introduced into the dream, be able to draw from the dreamer the profoundest secrets of his bosom: the other senses of the latter, instead of rousing hereby to detect the imposition, being plunged into a still deeper lethargy, from the demand of an increased quantity of sensorial power to support the exhaustion which the wakeful or active organ is in consequence sustaining.

VII. If the wakeful nerves be the optical alone, the somnambulist or dreamer, who is accustomed to walk in his sleep, will be able to make his way towards any place to which the course of his dreams directs him with the most perfect ease, and without the smallest degree of danger; he will see as clearly, and perhaps more so, as if generally awake; yet, from the very exhaustion, and, of course, increased torpidity of the organs, in consequence of an increased demand of sensorial power from the common stock to support the action of the sense and muscles immediately engaged, every other sense must necessarily be thrown into a deeper sleep or torpidity than on any other occasion. Hence the ears will not be roused even by a sound that might otherwise awake him; he will be insensible, not only to a simple touch, but a severe shaking of his limbs, and may even cough violently without being recalled from his dream. Having accomplished the object of his pursuit, he may safely return, even over the most dangerous precipices, for he sees them distinctly, to his bed; and the optical nerves themselves being now quite exhausted, and the system at large incapable of affording any addition of sensorial power, the torpidity must necessarily be rendered general and profound; so profound, perhaps, as to destroy the habitual action of the nervous tubules of the brain itself, and produce sleep without thought or dreaming.

VIII. This phenomenon of somnambulism has never, that I know of, to the present day, been satisfactorily or even plausibly accounted for. It follows necessarily, in conjunction with that of speaking and conversing in sleep, from the theory of which I have now, for the first time, presented the outlines: and, I trust, will appear plain and intelligible to the reader.'

SLEEP (*Somnus*), with the ancient poets, was the son of Erebus and of Night, according to Homer and Hesiod, and the brother of Mors or Death. Virgil (*AEn.* vi. v. 278) assigns to this deity an abode with Death, in the subterraneous or invisible world. Statius and Ovid place his chief residence, or great palace of Somnus, on our earth, in the country of the Cimmerians; no country agreeing better with sleep than that which is overspread with eternal darkness. *Theb.* x. v. 84 to 117. *Met.* xi. v. 592 to 645. Dreams were the children of sleep; Ovid names three of them, viz. Morpheus, Phobetor, and Phantasia.

By artists this deity is commonly represented as a soft youth, stretched at his ease on a couch, resting his head on a lion's skin, and sometimes on a lion; with one arm either a little over or under his head, and the other dropping negli-

gently by the side of the couch, and either holding poppies, or a horn with the juice of poppies in it. He is often winged, and much resembles a little Cupid, from whom he is distinguished by the lizard (an animal supposed to sleep half the year) placed at his feet. There is scarcely any one of the deities that is more fully and particularly described by the poets than this deity of sleep.—*Spence's Polymetis.*

SLEEP, in the new System of Medicine. See PHYSIOLOGY.

SLEEP, in the mythology. See MORPHEUS and SOMNUS.

SLEEP OF PLANTS, *somnus plantarum*, is a term used by Linnaeus, to express a peculiar state in the constitution of many plants during the night, evinced by a change of position, a drooping, or a folding together, of their leaves or leaflets. Such a change, being occasioned by the withdrawing of the stimulus of light, is probably a state of rest to their vital functions, and therefore the above term is not so hyperbolical as at first appears. Linnaeus has given a curious treatise on this subject, in the *Amænitates Academicæ*, v. 4, 333. The phenomenon had been noticed long before, by Acosta and Prosper Alpinus in the tamarind tree; and the latter points out several parallel instances in other leguminous plants with pinnated leaves, natives of Egypt. It is indeed most remarkable in such plants. But Linnaeus has elaborately described the various positions which the leaves of different plants assume in their sleep. In general, it may be remarked that they cover or fold together the upper surfaces of their leaves, exposing the under, which latter is almost uniformly impatient of light. This is so much the case, that we cannot but suspect the effect of the returning light upon the backs of such leaves, may be the immediate cause of their withdrawing from it, and thus the upper surface becomes necessarily presented to its rays. A similar effect of light is seen in many flowers, particularly of the compound tribe. See BOTANY, PHYSIOLOGY, and SENSITIVE.

SLEEP OF THE SOUL, in theology, denotes a supposed insensible, and inactive state, into which some have thought that mankind are removed at death, and in which they remain till the period of their resurrection: the term has been used by way of contradistinction to that which has been commonly called the intermediate or separate state. Of the advocates of this opinion, some have allowed the essential distinction between body and spirit, and the natural immortality of the human soul; so that, being a substance and not a mode, it will go on to exist, till by some positive act of the Creator it is annihilated. They cannot admit the supposition that the whole man becomes extinct at death, or that death destroys or annihilates the thinking substance; because they say, the resurrection on this hypothesis will not be a resurrection, but a creation of a new set of beings: if death annihilates us in this sense, there can be no future state; because a being who has lost his existence cannot be recovered. Accordingly, they maintain that what happens to the soul at death can be no more than a suspension of the

exercise of its faculties, or an incapacitation, from which it will by the power of Christ be delivered at the resurrection: and they allege, that there is an infinite difference between the annihilation of the soul at death, and its incapacitation; because, one who believes the former could not possibly entertain the hope of a future state; but one who believes the latter might reasonably entertain such hope. Death, they say, is a distress in which our species has been involved by extraordinary causes, and from which we have obtained the hope of being saved by the most extraordinary means, viz. by the interposition of Jesus Christ, who, taking upon him our nature, and humbling himself to death, has acquired the power of destroying death, and is on this account styled the Saviour of the world. However, most of those who deny the notion of an intermediate state of conscious perception between death and the general resurrection, reject the supposition of two distinct natures in man, and consider that principle, which is called the soul, not as a spiritual substance, but as a quality, or property, either superadded to matter by the Creator of our frame, or resulting from the organisation of the human body, and particularly of the brain. They accordingly allege that when the organised system to which the power of thinking, &c., is annexed, on which it depends, and from the organisation of which, as some maintain, it necessarily results, is dissolved by death; all the percipient and thinking powers of man, all his capacities of action, and of suffering, or of enjoyment, must be extinguished, and cease of course. And if the property of thinking necessarily attends the property of life, as some apprehend, nothing can be requisite to the restoration of all the powers of the man, but the restoration of the body (no particle of which can be lost) to a state of life. Whatever is decomposed, it is said, may certainly be recomposed by the same Almighty power that first composed it, with whatever change in its constitution, advantageous or disadvantageous, he shall think proper; and then the powers of thinking, and whatever depended upon them, will return of course, and the man will be, in the most proper sense, the same being that he was before. Those who hold this opinion maintain that, according to the Scriptures, life and immortality were brought to light by the gospel of Christ, in a sense exclusive of all other teachers, and all other revelations, at least from the birth of Moses downwards; exclusive, likewise, of all information from the light of nature, or the result of philosophical disquisition on the substance or qualities of the human soul. They hold, moreover, that the sentence pronounced upon our first parents imported a total deprivation of life, without any reserve, or saving to the life of the soul; and, consequently, that eternal life, or a restoration and redemption from the consequences of this sentence, was effected for, revealed, consigned, and insured to man, in and through Christ, and will be accomplished in no other way than that spoken of by Christ and his apostles, who, they say, have left no room to conclude that there is a separate or inter-

mediate life for the soul, when disunited from the body.

The late learned Dr. Law, bishop of Carlisle, having, with a particular view to the controversy concerning the intermediate state, enumerated the several passages both in the Old and New Testament, in which the words that are translated soul or spirit in our version occur, maintains that none of them ever stand for a purely immaterial principle in man, or a substance wholly separable from, and independent of, the body; and, after examining the account which the Scriptures give of that state to which death reduces us, he observes that it is represented by sleep, by a negation of all life, thought, or action; by rest, resting-place, or home, silence, oblivion, darkness, destruction, or corruption. He adds that the Scripture, in speaking of the connexion between our present and future being, doth not take into account our intermediate state in death; no more than we, in describing the course of any man's actions, take in the time he sleeps: and that, therefore, the Scriptures, in order to be consistent with themselves, must affirm an immediate connexion between death and judgment. As for those texts that are usually alleged on the other side of the question, which he has cited and endeavoured to accommodate to his own opinion, he thinks that they are quite foreign to the point, or purely figurative, or capable of a clear and easy solution on the principle which he adopts, viz. that the times of our death and resurrection are coincident; and that they cannot be fairly opposed to the constant obvious tenor of the sacred writings. With respect to philosophical arguments, deduced from our notions of matter, and urged against the possibility of life, thought, and agency, being so connected with some portions of it as to constitute a compound being or person, he imagines that they are merely grounded on our ignorance, and that they will equally prove against known fact and observation, in the production of various animals, as against the union of two such heterogeneous principles as those of the soul and body are supposed to be. With respect to the consequences of either opinion, he says, that on the one side, there is nothing more than a temporary cessation of thought, which can hurt nobody, except the self-interested papist, or the self-sufficient deist; but, on the other side, there is a manifest derogation from, if not a total subversion of, that positive covenant, which professes to entitle us to everlasting life. He adds that all proper and consistent notions of death, resurrection, and a future judgment, are confounded, and, in fine, all the great sanctions of the gospel rendered unintelligible or useless.

Another advocate of this soul-sleeping system contends that man shall become immortal, by the way of a resurrection of the dead, or a restoration of the whole man to life; and that the New Testament is so far from acknowledging any intermediate consciousness in man, between death and the resurrection, that it always speaks of that interval as a sleep, which implies a suspension of the thinking faculty, a rest from those labors which require thought, memory, consciousness,

&c., during which those faculties are useless. Besides, the scriptural system of immortality supposes that man had forfeited his original title to immortality, and would never have received it, but for the interposition of a Redeemer. The consequence of this doctrine is, that, between the time of the forfeiture and the actual appearance of the Redeemer, the dead could have life in no sense at all; and that neither before nor after the appearance of the Redeemer, dead men were, or would be restored to life, otherwise than in the way revealed by him, namely, a resurrection of the dead.

On the other hand, the advocates of a separate state insist that the soul being an active, simple, uncompounded, immaterial substance, is immortal in its own nature, and capable of an active and conscious existence, in a state of disunion and separation from the body; that this natural capacity of the soul was not impaired, or at all affected by any thing that happened upon the transgression of our first parents; that the death, to which they were condemned was only the death of the body: hence they infer that there is, and would have been, a future immortal state of being beyond the present life, and (the moral attributes of God presupposed) a just retribution therein, independent of the doctrine of a resurrection of the dead; and that, in the interval between death and the general resurrection, there is an intermediate state, in which the departed souls of good men are supposed to have an imperfect reward, and the souls of the wicked an imperfect punishment; but that every one, at the period of the reunion of the soul and body, and of final judgment, will receive a full and complete recompence for the deeds done in the body. In proof of this opinion they allege a variety of passages both from the Old and New Testament, the principal of which we shall here enumerate; Gen. ii. 7, xv. 15, xxxvii. 35; Exod. iii. 6; 1 Sam. xxviii. 11—19; 1 Kings, xvii. 21, 22; Ps. xxxi. 5; Eccles. iii. 21, xii. 7; Matt. x. 28. xvii. 3; Luke xvi. 19, xx. 38, xxxiii. 43, xxiv. 39; Acts i. 25, vii. 59; 2 Cor. v. 8, xii. 2; Phil. i. 21—24; 1 Pet. iii. 19, iv. 6; Heb. xi. 40, xii. 23; Rev. vi. 9, 10, xiv. 13. The fathers who lived in or near the time of the apostles are said to be unanimous in this opinion, and persuaded that the soul of every man upon the dissolution of the body died not, but had a proper place to go to, and accordingly this doctrine is to be found in the most ancient Christian liturgies.

The bishop of Carlisle observes that the word death, in its original and obvious sense, implies a cessation of all natural life, or a real dissolution and destruction of the whole man. Mr. Farmer also, a well-known writer, in the introduction to his General Prevalence of the Worship of Human Spirits, &c., 1783, has taken some pains to ascertain the meaning of the word death, in the threatening denounced against Adam. He says, that if human spirits were worshipped in the age of Moses, particularly in Egypt and Phoenicia, the word death could not at that time, and in those countries, denote more than the destruction of bodily life; for, if this

term had farther included in it the insensibility or extinction of the soul; the dead would not have been honored as gods. And if Moses had used it in this extensive sense, he would have been misunderstood by the Egyptians, who asserted the immortality of the soul, and by the Hebrews, who dwelt among them, and had adopted their system of religion. This writer, in confirmation of his interpretation of death, observes that although one great design of Moses, in giving an account of the introduction of death into the world, was to guard against the worship of departed spirits, and though nothing could have answered this design more effectually than representing the soul of Adam as a mere quality, or as the result of the peculiar structure and organisation of his body, yet, so far is he from supposing this to be the case, that, according to him, after the body of the first man was perfectly organised by the immediate hand of the Almighty, he did not become a living soul or person, till God breathed into his nostrils the breath of life; a principle distinct from the dust out of which his body was formed, and, therefore, capable of subsisting in a state of separation from it. Nor does Moses use the same language in relating the formation of any other living creatures; which proves that the principle of life in man is of a superior kind to that in brutes. Besides, the ancient patriarchs did not believe that the soul of man perished with his body. Agreeably to the most ancient opinion concerning departed spirits, the sacred writers supposed the souls of the dead to exist in sheol, or hades, a place invisible to human sight, and that, in the distribution of them, regard was had to the former relation in which they stood to one another. Moreover, Moses himself believed the separate subsistence of the soul, and has even given it a divine sanction. Gen. xv. 15. Nor do any of the sacred writers ever describe death in terms different from those used by persons, who certainly acknowledged the continuance of the soul after it. Sleep, by which it is described, is not a state of non-existence, but of rest; and it is well known that this soft image of death was commonly used to express the thing itself, by those who asserted the existence of souls in hades. Silence, oblivion, darkness, and corruption, by which the state of the dead is described, refer only to the body, or to the supposed state of the soul, while it was in sheol, and are not peculiar to the sacred writers, but were common in all countries, where both the popular belief, and the established worship, were inconsistent with the notion of the soul's perishing with the body. And many of the terms, by which death was described in all countries, clearly imply, and are built upon, a belief of the distinction between soul and body, and of their being separated at death.

Campbell in his Preliminary Dissertations (Part ii.) has introduced some remarks that deserve the greatest attention, in this controversy. He observes, I. That the arguments, on which the deniers of that state chiefly build, arise, in his opinion, from a misapprehension of the import of some scriptural expressions. Καθεύδειν, κοιμασθαι, to sleep, are often applied to the dead;

but this application is no more than a metaphorical euphonism, derived from the resemblance which a dead body bears to the body of a person asleep. Traces of this idiom may be found in all languages, whatever be the popular belief about the state of the dead. They often occur in the Old Testament; yet it has been shown that the common doctrine of the Orientals favored the separate existence of the souls of the deceased. But if it did not, and if, as some suppose, the ancient Jews were, on all articles relating to another life, no better than Sadducees, this shows the more strongly that such metaphors, so frequent in their writings, could be derived solely from bodily likeness, and, having no reference to a resurrection, could be employed solely for the sake of avoiding a disagreeable or ominous word. It is acknowledged, at the same time, that Christians have been the more ready to adopt such expressions, as their doctrine of the resurrection of the body presented to their minds an additional analogy between the bodies of the deceased and the bodies of those asleep, that of being one day awaked. But our author sees no reason to imagine that, in this use, they carried their thoughts further than to the corporeal and visible resemblance now mentioned. Another mistake about the import of scriptural terms is in the sense which has been given to the word *αναστάσις*. They confine it, by a use derived merely from modern European tongues, to that renovation which we call the reunion of the soul and the body, and which is to take place at the last day. But this is not always the sense of the term in the New Testament.

II. Dr. Campbell remarks that many expressions of Scripture, in the natural and obvious sense, imply that an intermediate and separate state of the soul is actually to succeed death. Such are the words of our Lord to the penitent thief upon the cross (Luke, xxiii. 43); Stephen's dying petition (Acts, vii. 59); the comparisons which the apostle Paul makes in different places (2 Cor. v. 6, &c.; Philip. i. 21) between the enjoyment which true Christians can obtain by their continuance in this world, and that on which they enter at their departure out of it, and several other passages. Let the words referred to be read by any judicious person, either in the original, or in the common translation, which is sufficiently exact for this purpose, and let him, setting aside all theory or system, say candidly whether they would not be understood, by the gross of mankind, as presupposing that the soul may and will exist separately from the body, and be susceptible of happiness or misery in that state. If any thing could add to the native evidence of the expressions, it would be the unnatural meaning that is put upon them, in order to disguise that evidence. The apostle Paul, they are sensible, speaks of the saints as admitted to enjoyment in the presence of God, immediately after death. Nevertheless, in order to palliate the direct contradiction this bears to their doctrine, that the vital principle, which is all they mean by the soul, remains extinguished between death and the resurrection, they remind us of the difference between absolute or real, and re-

lative or apparent, time. They admit that, if the apostle be understood as speaking of real time, what is said flatly contradicts their system; but they say his words must be interpreted as spoken only of apparent time. He talks indeed of entering on a state of enjoyment immediately after death, though there may be many thousands of years between the one and the other: for he means only, that when that state shall commence, however distant in reality the time may be, the person entering on it will not be sensible of that distance, and consequently there will be to him an apparent coincidence with the moment of his death. But, says Campbell, does the apostle anywhere give a hint that this is his meaning? or is it what any man would naturally discover from his words? Did the sacred penman, then, as our author proceeds, mean to put a cheat upon the world, and, by the help of an equivocal expression, to flatter men with the hope of entering, the instant they expire, on a state of felicity; when, in fact, they knew that it would be many ages before it would take place? But, were the hypothesis about the extinction of the mind between death and the resurrection well founded, the apparent coincidence they speak of is not so clear as they seem to think it.

III. This able writer remarks that even the various equivocations (or, perhaps, more properly, mental reservation), that has been devised for them, will not, in every case, save the credit of apostolical veracity. The words of Paul to the Corinthians are, 'Knowing, that whilst we are at home in the body, we are absent from the Lord.' Again, 'We are willing rather to be absent from the body, and present with the Lord.' Could such expressions have been used by him, if he had held it impossible to be with the Lord, or indeed any where, without the body; and that, whatever the change was which was made by death, he could not be in the presence of the Lord, till he returned to the body? Absence from the body, and presence with the Lord, were never, therefore, more unfortunately combined, than in this illustration. Things are combined here as coincident, which, in the hypothesis of those gentlemen, are incompatible. If recourse be had to the original, the expressions in Greek are, if possible, still stronger. They are, *οἱ εὐδημούντες ἐν τῷ σωματί*, those who dwell in the body, who are *εκδημούντες ἀπὸ τοῦ Κυρίου*, at a distance from the Lord; as, on the contrary, they are *οἱ εκδημούντες εἰκὸν τῷ σωματοῦ*, those who have travelled out of the body, who are *οἱ εὐδημούντες πρὸς τοὺς Κύρους*, those who reside, or are present with the Lord. In the passage to the Philippians, also, the commencement of his presence with the Lord is represented as coincident, not with his return to the body, but with his leaving it, with the dissolution, not with the restoration of the union. We may here subjoin an enquiry, how the apostle could be in a strait betwixt two (Philip. i. 23), that of living in the flesh, and being with Christ, which he pronounces to be far better, if the exercise of his powers of service and capacity of enjoyment ceased at death. A mind like his could not hesitate between living in the flesh, and thus serving the Christian cause, and sinking at death into a state

of total inaction, and of thus continuing for a long but indefinite period.

IV. The fourth remark of Dr. Campbell on this subject is that, from the turn of the New Testament, the sacred writers appear to proceed on the supposition that the soul and the body are naturally distinct and separable, and that the soul is susceptible of pain or pleasure in a state of separation. It were endless to enumerate all the places which evince this. The story of the rich man and Lazarus (*Luke*, xvi. 22, 23); the last words of our Lord upon the cross (*Luke*, xxiii. 46), and of Stephen when dying; Paul's doubts, whether he was in the body or out of the body, when he was translated to the third heaven and paradise (*2 Cor.* xii. 2, 3, 4); our Lord's words to Thomas, to satisfy him that he was not a spirit (*Luke*, xxiv. 39); and the express mention of the denial of spirits, as one of the errors of the Sadducees (*Acts*, xxiii. 8): these are irrefragable evidences of the general opinion on this subject, both of Jews and Christians. By spirit it is observed, as distinguished from angel, is evidently meant the departed spirit of a human being; for that man is here, before his natural death, possessed of a vital and intelligent principle, which is commonly called his soul or spirit, it was never pretended that they denied. It has been said that this manner of expressing themselves has been adopted by the apostles and evangelists, merely in conformity to vulgar notions. To me, says Dr. Campbell, it appears a conformaty, which (if the sacred writers entertained the sentiments of our antagonists in this article) is hardly reconcileable to the known simplicity and integrity of their character.

SLEEPERS, in natural history, a name given to those animals which sleep all winter; such as bears, marmots, dormice, bats, hedgehogs, swallows, &c. These do not feed in winter, have no sensible evacuations, breathe little or none at all, and most of the viscera cease from their functions. Some of these creatures seem to be dead, and others return to a state like that of the fetus before birth: in this state they continue, till by new heat the fluids are attenuated, the animal is restored to life, and the functions begin where they left off.

SLEEPERS, in a ship, timbers lying before and ast in the bottom of the ship, as the rungholes do: the lowermost of them is bolted to the rungholes, and the uppermost to the buttocks and rungs.

SLEEPNER, in the Saxon mythology, the horse of Odin. See MYTHOLOGY.

SLEEP-WALKER (from sleep and walker), one who walks in his sleep. See MEDICINE. Many instances might be related of persons who were addicted to this practice. A remarkable instance was published from a report made to the Physical Society of Lausanne, by a committee of gentlemen appointed to examine a young man who was accustomed to walk in his sleep. The disposition to sleep-walking seems, in the opinion of this committee, to depend on a particular affection of the nerves, which both seizes and quits the patient during sleep. Under the influence of this affection, the imagination repre-

sents to him the objects that struck him while awake, with as much force as if they really affected his senses; but does not make him perceive any of those that are actually presented to his senses, except in so far as they are connected with the dreams which engross him at the time. If, during this state, the imagination has no determined purpose, he receives the impression of objects as if he were awake; only, however, when the imagination is excited to bend its attention towards them. The perceptions obtained in this state are very accurate, and, when once received, the imagination renews them occasionally with as much force as if they were again acquired by means of the senses. Lastly, these academicians suppose that the impressions received during this state of the senses disappear entirely when the person awakes, and do not return till the return of the same disposition in the nervous system. Their remarks were made on the Sieur Devand, a lad thirteen years and a half old, who lived in the town of Vevey, and who was subject to that singular affection or disease called somnambulism, or sleep-walking. The particulars, however, are not worth quoting; as many of the facts seem disputable, and some totally incredible; and the reasoning of the committee on those that are admissible is far from being conclusive. See SLEEP.

SLEEP-WALKING, or SOMNAMBULISM. See MEDICINE, Index.

SLEEPY TERTIAN. See MEDICINE, Index.

SLEET, n. s. Dan. *slud*, *slet*; Swed. *slagg*. A kind of smooth small hail.

Perpetual sleet and driving snow  
Obscure the skies, and hang on herds below:  
Huge oxen stand inclosed in wintry walls  
Of snow congealed. Dryden.

Rains would have been poured down, as the vapours became cooler; next sleet, then snow and ice. Cheyne.

SLEET. See SNOW.

SLEEVE, n. s. } Or SLEAVE, which see.

SLEEVELESS, adj. } Sax. *plip*. The part of a garment that covers the arms: 'to hang on a sleeve' is, to make dependent: the adjective corresponding.

Once my well-waiting eyes espied my treasure,  
With sleeves turned up, loose hair, and breast enlarged,  
Her father's corn moving her fair limbs, measure.  
They put on sleeveless coats of home-spun cotton. Sidney.

The deep smock sleeve, which the Irish women use, they say, was old Spanish; and yet that should seem rather to be an old English fashion: for in armor, the fashion of the manche, which is given in arms, being nothing else but a sleeve, is fashioned much like to that sleeve: and knights, in ancient times, used to wear their mistress's or love's sleeve upon their arms. Sir Launcelot wore the sleeve of the fair maid of Asteloth in a tourney. Spenser's Ireland.

It is not for a man which doth know, or should know, what orders, and what peaceable government required, to ask why we should hang our judgment upon the church's sleeve, and why in matters of orders more than in matters of doctrine. Hooker.

Your hose should be ungartered, your sleeve un-

but ~~she~~ ~~she~~ shew unty'd, demonstrating a careless  
deception.

Shakspeare.

The innocent sleep;

Sleep that knits up the ravelled sleeve of care. *Id.*  
He was cloathed in cloth, with wide sleeves and a  
capa.

Bacon.

His clothes were strange though coarse, and black  
though bare;  
~~Severall~~ his jerkin was, and it had been  
Velvet; but 'twas now, so much ground was seen,  
Become tuffaffaty.

Donne.

This ~~Reueler~~ tale of transubstantiation was brought  
into the world by that other fable of the multipre-  
sence.

Hall.

In velvet white as snow the troop was gown'd,  
Their hoods and sleeves the same. *Dryden.*  
A brace of sharpers laugh at the whole roguery in  
their sleeves.

L'Estrange.

My landlady quarrelled with him for sending every  
one of her children on a sleeveless errand, as she calls  
it.

Spectator.

Men know themselves utterly void of those qualities  
which the impudent sycophant ascribes to them,  
and in his sleeve laughs at them for believing.

South's Sermons.

John laughed heartily in his sleeve at the pride of  
the esquire. *Arbuthnot's History of John Bull.*

Behold yon isle by palmers, pilgrims trod,  
Grave mummers! sleeveless some, and shirtless others.  
Pope.

SLEIDAN (John), an eminent German historian, born in 1506, at Sleidan, where he was educated along with the learned John Sturmius, his fellow citizen. He afterwards went to Paris; then to Orleans, where he studied the law three years, and took a licentiate's degree in it, though he never practised as a lawyer. Returning to Paris, in 1535, Sturmius recommended him to cardinal Du Bellay, who gave him a pension, and entrusted him with matters of importance. He accompanied the ambassador of France to the diet at Haguenau, and returned to Paris, where he remained till 1542; when, being suspected of indulging the opinions of Luther, he fled to Strasburg, where he was much patronised, particularly by the learned James Sturmius, by whose advice he wrote his celebrated History of his Own Times. He was afterwards employed in various negociations to France and England; and in one of these journeys, in 1546, married a lady whom he loved to distraction. In 1551 he went, as a delegate from the republic, to the Council of Trent. He was still usefully employed in public affairs till 1555, when the death of his beloved wife threw him into so deep a melancholy that he totally lost his memory, so as not even to know his own children. He died at Strasburg in 1556. He was much admired as a learned writer. His chief work is entitled *De Statu Religionis et Reipublicæ, Carolo V. Cæsare, Commentarii:* 1555, folio; containing the History of Europe from 1517 to 1555. He wrote many other works, particularly a small tract, *De Quatuor Monarchiis, vel summis imperiis, libri tres*; wherein he applies the prophecies of Daniel and St. John as most other Protestant commentators do.

SLEIGHT, n.s. Island. *slag'd* is cunning. Johnson. Swedish *slogd* (as if of sly-hood). Thomson. Artful trick; cunning artifice or

practice: as, sleight of hand, the tricks of a juggler. Often written, but less properly, slight.

Fair Una to the red cross knight

Betrothed is with joy;

Though False Duessa, it to bar,

Her false *sleights* do employ. *Faerie Queen.*

He that exhorted to beware of an enemy's policy,  
doth not give council to be impolite; but rather to  
be all prudent foresight, lest our simplicity be over-  
reached by cunning *sleights*.

Hooker.

Upon the corner of the moon

There hangs a vap'rous drop profound;

I'll catch it ere it come to ground;

And that, distilled by magick *sleights*,

Shall raise such artificial sprights,

As, by the strength of their illusion,

Shall draw him on to his confusion.

Shakspeare. *Macbeth.*

Out stepped the ample size

Of mighty Ajax, huge in strength; to him, Laerte's son,

The crafty one as huge in *sleight*.

Chapman.

She could not so convey

The massy substance of that idol great;

What *sleight* had she the wardens to betray?

What strength to heave the goddess from her seat?

Fairfax.

In the wily snake

Whatever *sleights*, none would suspicious mark,

As from his wit and native subtily

Milton.

Doubtless the pleasure is as great

Of being cheated, as to cheat;

As lookers on feel most delight,

That least perceive the juggler's *sleight*. *Hudibras.*

When we hear death related, we are all willing to favour the *sleight*, when the poet does not too grossly impose upon us.

Dryden.

Good humour is but a *sleight* of hand, or a faculty making truths look like appearances, or appearances like truths.

L'Estrange.

While innocent he scorns ignoble flight,

His honest friends preserve him by a *sleight*. *Swift.*

SLENDER, adj.

{ Belg. *slinder*. Thin;

SLEN'DERLY, adv. } small in circumference

SLEN'DERNESS, n.s. } or bulk compared with the length; weak; inconsiderable; sparing; not well supplied: the adverb and noun substantive corresponding.

If I have done well, it is that which I desired; but if slenderly and meanly, it is that which I could attain to.

2 Maccabees.

Yet they, who claim the general assent of the whole world unto that which they teach, and do not fear to give very hard and heavy sentence upon as many as refuse to embrace the same, must have special regard that their first foundations and grounds be more than slender probabilities.

Hooker.

The slenderness of your reasons against the book, together with the inconveniences that must of necessity follow, have procured a great credit upon it.

Whitfie.

At my lodging.

The worst is this, that at so slender warning,

You're like to have a thin and slender pittance.

Shakspeare.

Small whistles give a sound because of their extreme slender ness, the air is more pent than in a wider pipe.

Bacon.

If the debt be not just we know not what may be deemed just, neither is it a sum to be slenderly regarded.

Hayward.

So thick the roses bushing round  
About her glowed ; half stooping to support  
Each flower of slender stalk. *Milton.*

Positively to define that season, there is no slender difficulty. *Browne's Vulgar Errors.*

It is a very slender comfort that relies upon this nice distinction, between things being troublesome, and being evils ; when all the evil of affliction lies in the trouble it creates to us. *Tillotson.*

Beauteous Helen shines among the rest,  
Tall, slender, straight, with all the graces blest. *Dryden.*

The good Ostorius often designed  
To grace my slender table with his presence. *Philips.*

Their colours arise from the thinness of the transparent parts of the feathers ; that is, from the slenderness of the very fine hairs or capillamenta, which grow out of the sides of the grosser lateral branches or fibres of those feathers. *Newton.*

In obstructions inflammatory, the aliment ought to be cool, slender, thin, diluting. *Arbuthnot.*

It is preceded by a spitting of blood, occasioned by its acrimony and too great a projectile motion with slenderness and weakness of the vessels. *Id. on Diet.*

Love in these labyrinths his slaves detains,  
And mighty hearts are held in slender chains. *Pope.*

SLESWICK, or SCHLESSWIG, a duchy of the Danish dominions, which has Jutland to the north, and Holstein to the south, while on the east and west it is bounded by the sea. Its form is oblong ; its length is about seventy-two miles ; its breadth, without including the islands to the east or west, varies from thirty to fifty-six miles. It has no mountains, and not many elevations entitled to the name of hills. In most parts it is fit for tillage, and the products are barley, oats, and rye, with comparatively little wheat, hemp, or flax. Sleswick corresponds in latitude to the northern counties of England ; as also in humidity of climate, rain being produced there frequently by easterly, and still more frequently by westerly winds. The weather is very variable. Unfortunately great part of the interior is dry and sandy, so that the population (300,000 on the mainland, and 40,000 on the islands) is not large for a surface of 3600 square miles. On the superior soils, the freshness of the pasture is such as, with little skill on the part of an ignorant peasantry, to give a size and strength to the horses and horned cattle, which render them of value to foreigners, and lead to a regular, if not a large export. Butter and cheese are likewise abundant, and form articles of export. Sheep have not been improved with equal success, their wool being short and coarse. The inhabitants are of mixed descent, particularly of Danish, Saxon, and Friesland origin, each speaking their own dialect ; but the prevalent languages are German and Danish. The principal river is the Eyder, which, joined to the canal of Kiel, affords a direct navigation from the North Sea to the Baltic. The chief towns are—

				Population.
Flensburg	.	.	.	15,000
Kiel	.	.	.	7,100
Sleswick	.	.	.	7,000
Tondern	.	.	.	2,600
Tonningen	.	.	.	2,000

Kiel and Tonningen have a trade carried on by the canal and the Eyder; Flensburg is an improving place ; but the rest of the country exhibits little activity. The manufactures of woollen and linen are carried on, not in collective establishments, but in the cottages of the manufacturer : and the lace manufactures at Tondern and other places, as well as those of stockings, have suffered by the introduction of machinery in England. Fishing forms a considerable occupation on all the coasts.

Sleswick, like Holstein, preserves its ancient institutions : and the state of the peasantry is somewhat less backward than in Jutland ; but it was only in 1805 that feudal vassalage was definitively abolished. Sleswick has for many centuries been in close connexion with Denmark, and governed sometimes directly by the king, at other times by a brother of the reigning sovereign—a separation attended at last with such pretensions to independency as to determine the Danish government to unite it, in 1720, completely and definitively to the crown. See DENMARK.

SLESWICK, the capital of the foregoing duchy, is pleasantly situated on the Sley. It is a long irregular but neat town, containing about 7000 inhabitants. The objects of interest are the cathedral, its altar and the monuments of the princes ; the town-house, orphan-house, work-house, and the nunnery of St. John ; the houses are generally of brick. Here are manufactures of sugar, earthenware, leather and sail-cloth. Its commerce has been considerably improved since the Sley has been made navigable by a canal. In the ninth century Sleswick was a town of some note ; in the tenth it was destroyed and rebuilt ; in the fifteenth it shared the like fate. In its vicinity stands the castle of Gottorp. Eight miles north of Kiel, and 126 south-west of Copenhagen.

SLICE, *v. a. & n.s.* Saxon, *slican*; Teut. *schlitz*, of *schlitzen*, to slit. To cut into flat pieces, or into parts ; cut off a broad piece : the piece cut off.

Their cooks make no more ado, but, *slicing* it into little goblets, prick it on a prong of iron, and hang it in a furnace. *Sandy's Journey.*

The pelican hath a beak broad and flat, much like the *slice* of apothecaries, with which they spread plasters. *Hawkeville.*

Hacking of trees in their bark, both downright and across, so as you may make them rather in *slices* than in continued hacks, doth great good to trees. *Bacon.*

The residue were on foot, well furnished with jack and skull, pikes and *slicing* swords, broad, thin, and of an excellent temper. *Hayward.*

Nature lost one by thee, and therefore must *slice* one in two to keep her number just. *Cleaveland.*

When burning with the iron in it, with the *slice* clap the coals upon the outside close together, to keep the heat in. *Marot.*

Princes and tyrants *slice* the earth among them. *Burnet.*

When hungry thou stood'st staring like an oaf, *I sliced* the luncheon from the barley loaf. *Gay.*

Then clap four *slices* of pilaster on't ;

That, laced with bits of rustick, makes a front. *Pope.*

You need not wipe your knife to cut bread ; because in cutting a *slice* or two it will wipe itself. *Swift.*

He from out the chimney took  
A fitch of bacon off the hook,  
And freely, from the fattest side,  
Cut out large *slices* to be fried.

Id.

**SLICH**, in metallurgy, the ore of any metal, particularly of gold, when it has been pounded, and prepared for farther working. The manner of preparing the slich at Chremnitz in Hungary is: they lay a foundation of wood three yards deep; upon this they place the ore, and over this there are twenty-four beams, armed at their bottoms with iron; these, by a continual motion, beat and grind the ore, till it is reduced to powder: during this operation the ore is covered with water. Four wheels move these beams, each wheel moving six; and the water, as it runs off, carrying some of the metalline particles with it, is received into several basins, one placed behind another; and after having passed through them all, and deposited some sediment in each, it is let off into a large pit, half an acre in extent, in which it is suffered to stand so long as to deposit all its sediment, and after this it is let out. This work is carried on day and night, and the ore taken away and replaced by more as often as occasion requires. That ore which lies next the beams by which it was pounded is always the cleanest and richest. When the slich is washed as well as possible, 100 weight of it usually contains about an ounce or half an ounce of metal, which is a mixture of gold and silver; but the gold is in the largest quantity, and usually constitutes two-thirds of the mixture: they then put the slich into a furnace with some limestone, and slacken, and run them together. The first melting produces a substance called lech; this lech they burn with charcoal, to make it lighter, to open its body, and render it porous, after which it is called rost; to this rost they add sand in such quantity as they find necessary, and then melt it over again. At Chremnitz they have many other ways of reducing gold out of its ore, but particularly one, in which they employ no lead during the whole operation; whereas, in general, lead is always necessary after the before-mentioned processes. See METALLURGY.

**SLICK**, *adj.* Belg. *slickt*. See SLEEK.

Whom silver-bowed Apollo bred, in the Pierian mead,

Both *slicke* and daintie, yet were both in warre of wondrous dread.

Chapman.

Glass attracts but weakly; some *slick* stones and thick glasses indifferently. Browne's *Vulgar Errors*.

**SLICKENSIDES**, in mineralogy, a specular variety of galena, found in Derbyshire. It expresses the smoothness of its surface. It occurs lining the walls of very narrow rents. It has a most remarkable property, that when the rock in which it is contained is struck with a hammer, a crackling noise is heard, which is generally followed by an explosion of the rock, in the direction and neighbourhood of the vein. The cause of this singular effect has not been satisfactorily explained.

**SLIDE**, *v. n., v. a. &c.* Preterite slid; par-

**SLIDER**, *n.s.* [n. s.] ticiple pass. *slidden*. Sax. *flidian*, *flidende*, sliding; Belg. *slijden*; Welsh, *ys-lilie*; Teut. *schliffen*. See SLICE and SLIT. To pass along smoothly; slip; glide: pass inadvertently or unnoticed: to pass imper-

ceptibly: a smooth and easy passage or course flow.

Why is this people *slidden* back by a perpetual back-sliding?

Jer. viii. 5.

Make a door and a bar for thy mouth: beware thou slide not by it.

Eccl. xxviii. 26.

Oh, Ladon! happy Ladon! rather slide than run by her, lest thou shouldst make her legs slip from her.

Sidney.

In the princess I could find no apprehension of what I said or did, but a calm carelessness, letting every thing slide justly, as we do by their speeches who neither in matter nor person do any way belong unto us.

Id.

Thou shalt

Hate all, shew charity to none;

But let the famished flesh slide from the bone,

Ere thou relieve the beggar.

Shakspeare.

Sounds do not only slide upon the surface of a smooth body, but communicate with the spirits in the pores.

Bacon.

The discovering and reprehension of these colours cannot be done but out of a very universal knowledge of things, which so cleareth man's judgment, as it is the less apt to slide into any error.

Id.

There be whose fortunes are like Homer's verses, that have a slide and easiness more than the verses of other poets.

Id.

We have some slides or relishes of the voice or strings, continued without notes, from one to another, rising or falling, which are delightful.

Id. *Natural History*.

From the tops of heaven's steep hill she slid  
And straight the Greeks swift ships she reacht

Ulysses, Steneleus, Tisander, slide

Down by a rope, Machaon was their guide.

Denham.

Smooth sliding without step.

Milton.

The gallants dancing by the river's side,  
They bathe in summer, and in winter slide.

Waller.

Go thou from me to fate,  
Now die: with that he dragged the trembling sire  
*Sliddering* through clotted blood.

Dryden.

Ile that once sins, like him that slides on ice,  
Goes swiftly down the slippery ways of vice:  
Though conscience checks him, yet, those rubs gone o'er,

He slides on smoothly, and looks back no more.

Id.

At first the silent venom slid with ease,  
And seized her cooler senses by degrees.

Id. *Aeneid*.

Then no day void of bliss, of pleasure, leaving,  
Ages shall slide away without perceiving.

Dryden.

Nor could they have slid into those brutish immoralityes of life, had they duly manured those first practical notions and dictates of right reason.

South.

Such of them should be retained as slide easily of themselves into English compounds, without violence to the ear.

Pope.

Begin with sense, of every art the soul,  
Parts answering parts shall slide into a whole;

Nature shall join you, time shall make it grow

A work to wonder at.

Id.

Their eye slides over the pages, or the words slide over their eyes, and vanish like a rhapsody of evening tales.

Watts.

Little tricks of sophistry, by sliding in or leaving out such words as entirely change the question, should be abandoned by all fair disputants

Id.

Ye fair!

Be greatly cautious of your sliding hearts.

Thomson.

The tempter saw the danger in a trice;

For the man slidded upon fortune's ice.

Harte.

**SLIDING RULE**, a mathematical instrument, serving to perform computations in gauging, measuring, &c., without the use of compasses;

merely by the sliding of the parts of the instrument one by another, the lines and divisions of which give the answer or amount by inspection. This instrument is variously contrived and applied by different authors, particularly Gunter, Partridge, Hunt, Leadbeater, Symons, Everard, and Coggeshall; but the most usual and useful ones are those of the two latter.

Everard's sliding rule is chiefly used in cask gauging. It is commonly made of box, twelve inches long, one inch broad, and six-tenths of an inch thick. It consists of three parts; viz. the stock just mentioned, and two thin slips of the same length, sliding in small grooves in two opposite sides of the stock: consequently, when both these pieces are drawn out to their full extent the instrument is three feet long.

On the first broad face of the instrument are four logarithmic lines of numbers. The first, marked A, consisting of two radii numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 1; and then 2, 3, 4, 5, &c., to 10. On this line are four brass centre-pins, two in each radius; one in each of them being marked MB, for malt-bushel, is set at 2150·42, the number of cubic inches in a malt-bushel; the other two are marked with A, for ale gallon, at 282, the number of cubic inches in an ale gallon. The second and third lines of numbers are on the sliding pieces, and are exactly the same with the first; but they are distinguished by the letter B. In the first radius is a dot, marked S<sub>A</sub>, at ·707, the side of a square inscribed in a circle whose diameter is 1. Another dot, marked S<sub>B</sub>, stands at ·886, the side of a square equal to the area of the same circle. A third dot, marked W, is at 231, the cubic inches in a wine gallon. And a fourth, marked C, at 3·14, the circumference of the same circle, whose diameter is 1. The fourth line of numbers, marked MD, to signify malt-depth, is a broken line of two radii, numbered 2, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 9, 8, 7, &c.; the number 1 being set directly against MB on the first radius.

On the second broad face, marked cd, are several lines: as 1st, a line marked D, and numbered 1, 2, 3, &c., to 10. On this line are four centre-pins: the first, marked WG, for wine-gauge, is at 17·15, the gauge-point for wine gallons, being the diameter of a cylinder whose height is one inch, and content 231 cubic inches, or a wine gallon: the second centre-pin, marked AG, for ale-gauge, is at 18·95, the like diameter for an ale gallon: the third, marked MS, for malt square, is at 46·3, the square root of 2150·42, or the side of a square whose content is equal to the number of inches in a solid bushel: and the fourth, marked MR, for malt-round, is at 52·32, the diameter of a cylinder, or bushel, the area of whose base is the same 2150·42, the inches in a bushel. 2dly, Two lines of numbers on the sliding piece, on the other side, marked C. On these are two dots; the one marked c, at ·0795, the area of a circle whose circumference is 1; and the other, marked d, at ·785, the area of the circle whose diameter is 1. 3dly, Two lines of segments, each numbered 1, 2, 3, to 100; the first for finding the ullage of a cask, taken as the middle frustum of a spheroid, lying with its axis parallel to the

horizon; and the other for finding the ullage of a cask standing. Again, on one of the narrow sides, noted c, are, 1st, a line of inches, numbered 1, 2, 3, &c., to 12, each subdivided into ten equal parts. 2dly, A line by which, with that of inches, we find a mean diameter for a cask, in the figure of the middle frustum of a spheroid: it is marked spheroid, and numbered 1, 2, 3, &c., to 7. 3dly, A line for finding the mean diameter of a cask, in the form of the middle frustum of a parabolic spindle, which gaugers call the second variety of casks; it is therefore marked second variety, and is numbered 1, 2, 3, &c. 4thly, A line by which is found the mean diameter of a cask of the third variety, consisting of the frustums of two parabolic conoids, abutting on a common base; it is therefore marked third variety, and is numbered 1, 2, 3, &c.

On the narrow face, marked f, are, 1st, a line of a foot divided into 100 equal parts, marked FM. 2dly, A line of inches, like that before-mentioned, marked IM. 3dly, A line for finding the mean diameter of the fourth variety of casks, which is formed of the frustums of two cones, abutting on a common base. It is numbered 1, 2, 3, &c.; and marked FC, for frustum of a cone. On the backside of the two sliding pieces is a line of inches, from twelve to thirty-six, for the whole extent of the three feet, when the pieces are put endwise; and against that the correspondent gallons and 100th parts, that any small tub, or the like open vessel, will contain at one inch deep. For the various uses of this instrument, see the authors mentioned above, and most other writers on gauging.

Coggeshall's sliding rule is chiefly used in measuring the superficies and solidity of timber, masonry, brick-work, &c. This consists of two rulers, each a foot long, which are united together in various ways. Sometimes they are made to slide by one another, like glaziers' rules: sometimes a groove is made in the side of a common two-foot joint rule, and a thin sliding piece in one side, and Coggeshall's lines added on that side; thus forming the common or carpenters' rule: and sometimes one of the two rulers is made to slide in a groove made in the side of the other. There are several other varieties in the construction of the sliding rule, which need not here be described.

*SLIGHT, adj., n.s., & v. a.* { Belg. *slicht*; Teutonic *slicht*,  
*SLIGHTLY, adv.* } of *licht*, light;  
*SLIGHT'LY,* trivial. Small;  
*SLIGHT'NESS, n.s.* worthless; inconsiderable; weak; foolish; slight, noun substantive, is neglect; contempt; scorn; also artifice, cunning practice, confounded with *SLEIGHT*, which see. The verb active means to disregard; treat with neglect: the adverbs and noun substantive corresponding.

Words, both because they are common, and do not so strongly move the fancy of man, are for the most part *slightly* heard. *Hooker.*

. Is Cæsar with Antonius prized so slight?  
Shakespeare.

The rogues *slighted* me into the river with as little remorse as they would have drowned puppies. *Id.*

Leave nothing fitting for the purpose  
Untouched, or *slightly* handled in discourse. *Id.*

Where gentry, title, wisdom,  
Cannot conclude but by the yea and no

Of general ignorance, it must omit

Real necessities, and give way the while

T' unstable *slightness*. *Id. Coriolanus.*

The shaking of the head is a gesture of slight re-  
fusal. *Bacon.*

These men, when they have promised great matters,  
and failed most shamefully, if they have the per-  
fection of boldness, will but *slight it over*, and no  
more ado. *Id. Essays.*

What strong cries must they be that shall drown  
so loud a clamour of impieties! and how does it re-  
proach the *slightness* of our sleepy heartless addresses!

*Decay of Piety.*

Beware

Lest they transgress and *slight* that sole command. *Milton.*

I lie in contempt

At one *slight* bound high o'erleaped all bound. *Id.*

Scorn not

The facile gates of hell too *slightly* barred. *Id.*

No beast ever was so *slight*

For man, as for his God, to fight. *Hudibras.*

If my sceptick speaks *slightly* of the opinions he  
opposes, I have done no more than became the part. *Bayle.*

Their arms, their arts, their manners, I disclose;  
*Slight* is the subject, but the praise not small,  
If heaven assist, and Phocbus hear my call. *Dryden.*

His death and your deliverance  
Were themes that ought not to be *slighted* over. *Id.*

As boisterous a thing as force is it rarely achieves  
any thing but under the conduct of fraud. *Slight* of  
hand has done that, which force of hand could never  
do. *South.*

Some firmly embrace doctrines upon *slight* grounds,  
some upon no grounds, and some contrary to ap-  
pearance. *Locke.*

You cannot expect your son should have any re-  
gard for one whom he sees you *slight*. *Id.*

The letter-writer dissembles his knowledge of this  
restriction, and contents himself *slightly* to mention  
it towards the close of his pamphlet. *Atterbury.*

After Nic had bambouzed John awhile, what  
with *slight* of hand, and taking from his own score  
and adding to John's, Nic brought the balance to his  
own side. *Arbuthnot.*

*Slight* is the subject, but not so the praise,  
If she inspire, and he approve my lays. *Pope.*

Long had the Gallick monarch, uncontrouled,  
Enlarged his borders, and of human force  
Opponent *slightly* thought. *Philips.*

People in misfortune construe unavoidable acci-  
dents into *slights* or neglects. *Clarissa.*

Could I believe that winds, for ages pent  
In Earth's dark womb, have found at last a vent,  
And from their prison-house below arise,  
With all these hideous howlings to the skies,  
I could be much composed, nor should appear,  
For such a cause to feel the *slightest* fear,  
Yourselves have seen what time the thunders rolled  
All night, me resting quiet in the fold. *Cowper.*

SLIGO, a county of Ireland, situated in the  
province of Connaught. It is bounded on the  
north by Donegal Bay, on the east by part of  
Leitrim county, on the south and west by Mayo.  
It supports, on a superficial area of about  
247,000 acres, a population of 150,000 inha-  
bitants, who are lodged in 27,000 dwellings.  
The greatest length of this shire is about forty

English miles, and its maximum breadth is about  
thirty-seven. The baronies are Carbury Lower,  
Carbury Upper, Coolavin, Corran, Leney, Ti-  
raghhill, Tyreragh, which are subdivided into  
thirty-nine parishes. The only towns of conse-  
quence are Sligo, Ballymote, Colooney, and  
Ardnaree, but there are upwards of twenty vil-  
lages. The principal rivers are the Garrow, the  
Bonnet, the Arrow, the Esky, the Ucion, the  
Moy, and the Oweunmore. The chief lakes are  
the Arrow, the Garrow, and the Talt, the sum  
of whose superficial areas amounts to 20,000  
acres, besides Temple House and Lough Gill.  
The last of these is famous for its picturesque  
scenery, and on its banks are the demesne and  
beautiful residence of Mr. Wynne, called Hazel-  
wood, objects of much attraction to the lovers of  
the picturesque. Sligo abounds in monastic re-  
mains (forty of which are still traceable), some  
extremely beautiful, possessing the advantages of  
romantic situation and great elegance of archi-  
tecture. Sligo abbey, the ruins of Ballysadare,  
and the stone-roofed chapel on Inismurphy, are  
probably the most interesting.

The surface of this county is of a mountainous  
character; the chief range, crossing from Foxford  
to Ballysadare, passes south of Lough Gill to  
Manor Hamilton. This great assemblage is of  
primary formation, the upper strata generally  
consisting of mica slate, on which massive and  
slaty hornblende repose, while limestone (of  
secondary formation) crosses out at the base, in  
the channels and banks of all the rivers. The  
basin of Lough Gill is limestone, and, in gene-  
ral, this valuable stone prevails through the low-  
lands of the county. The districts at a medium  
height, which are also tolerably fertile, appear to  
be formed of disintegrated mica slate, combined  
with calcareous matter. Few mines are yet  
worked here. The lead mine at Ballysadare  
contains a large portion of silver, and, if freed  
from water, would be found highly productive.  
Iron stone is extensively diffused over the county;  
and sufficient proof remains of the existence of  
smelting houses in ancient times, when the woods  
supplied fuel in abundance. At the base of  
Benbo Mountain, where limestone is found re-  
posing upon granite, rich veins of copper are  
known to exist. While this retired and remote  
district continues unnoticed by public specula-  
tors in mineral and other wealth, some few pri-  
vate individuals, possessing waste lands there,  
are exerting themselves, with spirit and judg-  
ment, for their improvement and reclamation.  
Amongst these lord Palmerston's extensive plans,  
now executing at Mullaghmore, should not pass  
unobserved. Here a safety harbour is erected  
for the fishing craft, a new village just arising,  
and 10,000 acres of land divided, enclosed, and  
furnished with excellent roads, at the sole ex-  
pense of the noble proprietor. Piers have also  
been erected at and near to Sligo town by the fish-  
ery board, so that this bold coast will henceforth  
be less terrific to the boatman and the mariner.  
There is a good deal of export trade carried on  
along the coast of the county, and much direct  
communication with the ports in the west of  
England. Of late years the linen trade has also  
greatly advanced through this district. Sligo

county returns two members to the imperial parliament.

**SLIGO**, a town in the county of the same name, situated in the province of Connaught and kingdom of Ireland; in lat.  $54^{\circ} 12' N.$ , lon.  $8^{\circ} 40' W.$  It is a borough, port, and fair town, and is 134 English miles from the city of Dublin. Sligo is said to have been founded about the year 1242, by Maurice Fitzgerald, lord justice of Ireland, to whom also is due the merit of erecting there the beautiful monastery for Dominicans, part of which is still extant, but united to structures of more recent erection. The cloisters of Sligo abbey are still beautiful and in tolerable preservation, but for the partial restitution and preservation of the rest of this interesting ruin the public are indebted to its present noble proprietor, lord Palmerston. Sligo town is built upon the river Garrow, which rises in Lough Gill, but which, unfortunately, is not navigable the whole length from the bay to the town. The distance, however, of the pier is sufficiently convenient for commercial purposes, and accordingly we find that the trade of this port is considerable. There are 275 vessels belonging to this bay, the carrying measure of which amounts to 19,666 tons. The fishery, also, between Raughley Point and Augheis is very productive in turbot, rock-cod, and ling; and, if the pier were carried into deep water, would be much more so. The population of Sligo amounts to about 16,000 souls, who are chiefly engaged in the exportation of oats, butter, yarn, and linen. The chief imports are coal, iron, and pottery-ware. Sligo ranks above Galway as a place of commerce, holds little immediate communication with the city of Dublin, but much direct trade with Liverpool and the west of England. If the pier of Sligo Bay were extended, the iron and coal country of Leitrim, opened by means of a rail-way, or water carriage, from Lough Allen to Lough Gill, the town of Sligo would rise much higher in commercial importance. The chief buildings in this town are two churches, one of them ornamented with a handsome steeple and spire; two Roman Catholic chapels, one Independent and one Methodist chapel; a barrack, jail, court-house, and infirmary. Here is also a charter-school for forty-eight boys, and a charity-school for 100, besides two schools supported by the Hibernian Society, the one having 120 boys, the other an equal number of girls. In the parish of Colny, in part belonging to the town, lady Sarah Wynne supports a school of sixteen boys and twenty-six girls, and the charter-school derives part of its endowments from her ladyship's predecessors. Sligo returns one member to the imperial parliament.

**SLIM**, *adv.* Island. *slam*. A cant word. Slender; thin of shape.

A thin *slim-gutted* fox made a hard shift to wriggle his body into a henroost; and, when he had stufst his guts well, squeezed hard to get out again; but the hole was too little. *L'Estrange.*

I was jogged on the elbow by a *slim* young girl of seventeen. *Addison.*

**SLIME**, *n.s.* { Sax. *plum*; Belg. *sligm*; **SLIMNESS**, { Goth. *slim*. Viscous mire; **SLIMY**, *adj.* Any glutinous substance:

sliminess is viscosity: the adjective corresponding.

Brick for stone, and *slime* for mortar. *Genesis.*

The higher Nilus swells  
The more it promises: as it ebbs, the seedsman,  
Upon the *slim* and ooze, scatters his grain.

*Shakespeare.*

Some lay in dead men's skulls, and in those holes,  
Where eyes did once inhabit, there were crept,  
As 'twere in scorn of eyes, reflecting gems,  
That wo'd the *slimy* bottom of the deep,  
And mocked the dead bones that lay scattered by.

*Id.*

God, out of his goodness, caused the wind to blow,  
to dry up the abundant *slime* and mud of the earth,  
and make the land more firm, and to cleanse the air  
of thick vapours and unwholesome mists. *Raleigh.*

Some plants grow upon the top of the sea, from  
some concretion of *slime* where the sun beateth hot,  
and the sea stirreth little. *Bacon's Natural History.*

They have cobwebs about them, which is a sign of  
a *slimy* dryness. *Bacon.*

And with asphaltick *slime*, broad as the gate,  
Deep to the roots of hell, the gathered beach  
They fastened. *Milton's Paradise Lost.*

O foul descent! I'm now constrained  
Into a beast, to mix with bestial *slime*,  
This essence to incarnate and imbrute. *Milton.*

Then both from out hell gates, into the waste  
Wide anarchy of Chaos, damp and dark,  
Hovering upon the waters, what they met  
Solid or *slimy*, as in raging sea,  
Tost up and down, together crowded drove. *Id.*

The rest are all by bad example led,  
And in their father's *slimy* track they tread. *Dryden.*

By a weak fermentation a pendulous *sliminess* is  
produced, which answers a pituitous state. *Floyer.*

Eels, for want of exercise, are fat and *slimy*.

*Arbuthnot.*

The astrological undertakers would raise men like  
vegetables out of some fat and *slimy* soil, well digested  
by the kindly heat of the sun, and impregnated  
with the influence of the stars. *Bentley.*

The *slimy* pool to build his hanging house. *Thomson.*

Shoals of slow house-bearing snails do creep  
O'er the ripe fruitage, paring *slimy* tracks  
In the sleek rind. *Philips.*

**SLING**, *n.s. & v.u.* { Sax. *plingan*; Belg.

**SLINGER**, *n.s.* { *stlingen*; Dan. *slyng*. A  
missive weapon made of a strap and strings;  
a throw or stroke: to throw; cast; to hang or  
move by a sling.

The *slingers* went about it, and smote it.

*2 Kings iii. 25.*

The arrow cannot make him flee; *sling* stones are  
turned with him into stubble. *Job xli. 28.*

Dreads he the twanging of the archer's string?  
Or singing stones from the Phoenician *sling*? *Sandys.*

*Slings* have so much greater swiftness than a stone  
thrown from the hand, by how much the end of the  
*sling* is farther off from the shoulder-joint, the center  
of motion. *Wilkins.*

At one *sling*

Of thy victorious arm, well-pleasing son,  
Both sin and death, and yawning grave at last  
Through chaos hurled, obstruct the mouth of hell.

*Milton.*

The Tuscan king

Laid by the lance, and took him to the *sling*,  
Thrice whirl'd the thong around his head, and threw  
The heated lead, half melted as it flew.

*Dryden's Aeneid.*

From rivers drive the kids, and *sling* your hook,  
Anon I'll wash them in the shallow brook.

Dryden.

*Etna's entrails* fraught with fire,  
That now casts out dark fumes and pitchy clouds,  
Incensed, or tears up mountains by the roots,  
Or slings a broken rock aloft in air. Addison.

They *slung* up one of their largest hogsheads, then  
rolled it towards my hand, and beat out the top.  
*Gulliver's Travels.*

A SLING is an instrument for casting stones with great violence. The inhabitants of the Balearic Islands were famous in antiquity for the dexterous management of the sling: it is said they used three kinds of slings, some longer, others shorter, which they used according as their enemies were either nearer or more remote. It is added that the first served them for a headband, the second for a girdle, and that the third they constantly carried in their hand.

SLINGELAND (John Peter Van), a Flemish painter, born at Leyden, in 1640. He was a disciple of Gerard Douw, and excelled him in neatness of manner; but was so slow that he took up three years in painting one family picture. He died in 1691.

SLINGING is used variously at sea; but chiefly for hoisting up casks or other heavy things with slings, i. e. contrivances of ropes spliced into themselves at either end, with one eye big enough to receive the cask or whatever is to be slung. There are other slings, which are made longer, and with a small eye at each end; one of which is put over the breech of a piece of ordnance, and the other eye comes over the end of an iron crow, which is put into the mouth of the piece, to weigh and hoise the gun as they please. There are also slings by which the yards are bound fast to the cross-tree aloft, and to the head of the mast, with a strong rope or chain, that if the tie should happen to break, or to be shot to pieces in fight, the yard, nevertheless, may not fall upon the hatches.

SLINGING A MAN OVERBOARD, to stop a leak in a ship, is done thus:—The man is trussed up about the middle in a piece of canvas, and a rope to keep him from sinking, with his arms at liberty, a mallet in one hand, and a plug, wrapped in oakum and well tarred in a tarpauling clout, in the other, which he is to beat with all dispatch into the hole or leak.

SLINK, *v. n. & v. a., pret. slunk.* Sax. *flim-gan*, to creep; Swed. *slinka*. To sneak; steal out of the way: and, in a low sense, to cast: miscarry.

We will *slink* away in supper time, disguise us at my lodging, and return all in an hour.

*Shakspeare, Merchant of Venice.*

As we do turn our backs  
From our companion, thrown into his grave,  
So his familiars from his buried fortunes  
*Slink* away. *Id. Timon of Athens.*

He, after Eve seduced, unmindful *stunk*  
Into the wood fast by. *Milton's Paradise Lost.*

Not far from hence doth dwell

A cunning man, hight Sidrophel,

To whom all people far and near

On deep importances repair;

When brass and pewter hap to stray,

And linen *slinks* out of the way. *Hudibras.*

She *slunk* into a corner, where she lay trembling till the company went their way. *L'Estrange.*

To prevent a mare *slinking* her foal, in snowy weather, keep her where she may have good spring water to drink. *Mortimer.*

He would pinch the children in the dark, and then *slink* into a corner, as if nobody had done it. *Arbuthnot's History of John Bull.*

A weasel once made shift to *slink*

In at a corn-loft through a chink;

But, having amply stuff'd his skin,

Could not get out as he got in. *Pope.*

We have a suspicious, fearful, and constrained countenance in turning back, and *slinking* through narrow lanes. *Swift.*

SLIP, *v. n., v. a., & n. s.*

Saxon *flipan*;

Belgic *slippen*;

Dan. *slippe*; Swed.

SLIP'KNOT,

*slippa*. To slide;

SLIP'PER, *n. s. & adj.*

glide; move out

SLIP'PERY, *adj.*

of place; creep;

SLIP'PERILY, *adv.*

sneak; fall into

SLIP'PERINESS, *n. s.*

fault or censure;

SLIP'PY, *adj.*

escape: as a verb

SLIP'SHOD.

active, to convey secretly or imperceptibly; cut off or let loose, by small degrees; pass over negligently: as a noun substantive, the act of slipping; false step; error; mistake; an escape; desertion; a chip or piece taken from a main stock: a slipboard is a board sliding in grooves: slipknot, a knot easily slipped or untied: slippery, a shoe, into which the foot easily slips: Spenser uses it as an adjective for slippery, which means glib; smooth; not affording firm footing or hold: and hence uncertain; changeable; the adverb and noun substantive following corresponding: slippery is a provincial barbarism for slippery: slipshod, having the shoes barely slipped on.

Their ways shall be as *slippery* ways in the darkness. *Jer. xxiii.*

When Judas saw that his host *slipt* away, he was sore troubled. *1 Mac. ix. 7.*

An eloquent man is known far and near; but a man of understanding knoweth when he *slippeth*. *Eccl. xxi. 7.*

His promise to trust to as *slippery* as ice. *Tusser.*

Oh Ladon, happy Ladon! rather slide than run by her, lest thou shouldst make her legs *slip* from her. *Sidney.*

From her most beastly company

I gan refrain, in mind to *slip* away,

Soon as appeared safe opportunity. *Spenser.*

A trustless state of earthly things, and *slipper* hope Of mortal men, that swinke and sweat for nought. *Id.*

By the hearer it is still presumed, that if they be let *slip* for the present, what good soever they contain is lost, and that without all hope of recovery. *Hooker.*

In truth, they are fewer, when they come to be discussed by reason, than otherwise they seem, when by heat of contention they are divided into many *slips*, and of every branch an heap is made. *Id.*

If he had been as you,

And you as he, you would have *slipt* like him;

But he, like you, would not have been so stern. *Shakspeare.*

This bird you aimed at, though you hit it not.

—Oh, sir, Lucentio *slipped* me like his greyhound, Which runs himself, and catches for his master. *Id.*

*There put on him*

What forgeries you please : marry, none so rank  
As may dishonour him ;  
But, Sir, such wanton, wild, and usual slips,  
As are most known to youth and liberty. *Id.*

Adoption strives with nature, and choice breeds  
A native slip to us from foreign seeds. *Id.*

I see you stand like greyhounds in the slips,  
Straining upon the start. *Id. Henry V.*

In large wounds a single knot first ; over this a  
little linen compress, on which is another single  
knot : and then a *slipknot*, which may be loosened  
upon inflammation. *Shakspeare.*

When they fall, as being slippery standers,  
The love that leaned on them, as slippery too,  
Doth one pluck down another, and together  
Die in the fast. *Id. Troilus and Cressida.*

Oh world, thy slippery turns ! Friends now fast  
sworn,  
Whose double bosoms seem to wear one heart,  
Whose hours, whose bed, whose meal and exercise  
Are still together ; who twine, as 'twere, in love  
Unseparable, shall within this hour,  
On dissension of a doit, break out  
To bitterest enmity. *Shakspeare.*

My wife is slippery. *Id. Winter's Tale.*

A gown made of the finest wool,  
Which from our pretty lambs we pull ;  
Fair lined slippers for the cold,  
With buckles of the purest gold. *Raleigh.*

Trees are apparelled with flowers or herbs by  
boring holes in their bodies, and putting into them  
earth holpen with muck, and setting seeds or slips of  
violets in the earth. *Bacon.*

You are not now to think what's best to do,  
As in beginnings ; but what must be done,  
Being thus entered ; and slip no advantage  
That may secure you. *Ben Jonson's Catiline.*  
Of the promise there made, our master hath failed  
us, by slip of memory, or injury of time. *Wotton's Architecture.*

The slips of their vines have been brought into  
Spain. *Abbot.*

God is said to harden the heart permissively, but  
not operatively, nor effectively ; as he who only lets  
loose a greyhound out of the slip, is said to hound  
him at the hare. *Bramhall.*

The slippery tops of human state,

The gilded pinnacles of fate. *Couley.*

The blessing of the Lord shall slip from thee,  
without doing thee any good, if thou hast not ceased  
from doing evil. *Taylor.*

The highest hill is the most slippery place,  
And fortune mocks us with a smiling face. *Denham.*

Slipping from thy mother's eye, thou went'st  
Alone into the temple ; there was found  
Among the gravest rabbies disputant,  
On points and questions fitting Moses' chair. *Milton.*

Let us not slip the' occasion, whether scorn  
Or satiate fury yield it from our foe. *Id.*

So have I seen some tender slip,  
Saved with care from winter's nip,  
The pride of her carnation train,  
Plucked up by some unheedy swain. *Id.*

The more shame for her goodyship,  
To give so near a friend the slip. *Hudibras.*

This religious affection, which nature has im-  
planted in man, would be the most enormous slip  
she could commit. *More.*

A skilful dancer on the ropes slips willingly, and  
makes a seeming stumble, that you may think him  
in great hazard, while he is only giving you a proof  
of his dexterity. *Dryden.*

Thrice around his neck his arms he threw,  
And thrice the flitting shadow slipped away,  
Like winds or empty dreams that fly the day. *Id.*

The impatient greyhound, slip from far,  
Bounds o'er the glebe to course the fearful hare. *Id.*

Alonzo, mark the characters ;  
And if the impostor's pen have made a slip  
That shews it counterfeit, mark that and save me. *Id.*

Beauty, like ice, our footing does betray ;  
Who can tread sure on the smooth slippery way ? *Id.*

I'll slip down out of my lodging. *Id. Don Sebastian.*

One ill man may not think of the mischief he  
could do, or slip the occasion. *L'Estrange.*

One casual slip is enough to weigh down the faithful  
service of a long life. *Id.*

One sure trick is better than a hundred slippery ones. *Id.*

The daw did not like his companion, and gave  
him the slip, and away into the woods. *Id.*

For watching occasions to correct others in their  
discourse, and not to slip any opportunity of shewing  
their talents, scholars are most blamed. *Locke.*

Lighting upon a very easy slip I have made, in  
putting one seemingly indifferent word for another,  
that discovery opened to me this present view. *Id.*

Their explications are not yours, and will give  
you the slip. *Id.*

They are propagated not only by the seed, but  
many also by the root, and some by slips or cuttings. *Ray on the Creation.*

They trim their feathers, which makes them oily  
and slippery, that the water may slip off them. *Mortimer.*

The runners spread from the master-roots, and  
have little sprouts or roots to them, which, being  
cut four or five inches long, make excellent sets : the  
branches also may be slipped and planted. *Id. Husbandry.*

They draw off so much line as is necessary, and  
fasten the rest upon the line-rowl with a slipknot,  
that no more line turn off. *Moxon's Mechanical Exercises.*

If he went abroad too much, she'd use  
To give him slippers, and lock up his shoes. *King.*

When a corn slips out of their paws, they take  
hold of it again. *Addison's Spectator.*

The mathe-natianian proceeds upon propositions he  
has once demonstrated ; and, though the demonstra-  
tion may have slipped out of his memory, he builds upon  
the truth. *Addison.*

Any little slip is more conspicuous and observable  
in a good man's conduct than in another's, as it is  
not of a piece with his character. *Id. Spectator.*

Between these eastern and western mountains lies  
a slip of lower ground, which runs across the island. *Addison.*

If a man walks over a narrow bridge when he is  
drunk, it is no wonder that he forgets his caution  
while he overlooks his danger ; but he who is sober,  
and views that nice separation between himself and  
the devouring deep, so that, if he should slip, he sees  
his grave gaping under him, surely must needs take  
every step with horror and the utmost caution. *South.*

If after some distinguished leap  
He drops his pole, and seems to slip,  
Straight gathering all his active strength,  
He rises higher half his length. *Prior.*  
We do not only fall by the slipperiness of our  
tongues, but we deliberately discipline them to mis-  
chief. *Government of the Tongue.*

Wise men watch every opportunity, and retrieve every mispent hour which has slipped from them.

*Rogers.*

To slip the market, when thus fairly offered, is great imprudence.

*Collier.*

Thus far my author has *slipt* his first design; not a letter of what has been yet said promoting any ways the trial.

*Atterbury.*

If our author gives us a list of doctrines, with what reason can that about indulgences be *slipped* over?

*Id.*

In his officious attendance upon his mistress he tried to *slip* a powder into her drink.

*Arbuthnot's History of John Bull.*

Oily substances only lubricate and make the bowels *slippery*.

*Arbuthnot.*

The white of an egg is ropy, *slippy*, and nutritious.

*Floyer.*

Sometimes the ankle-bone is apt to turn out on either side, by reason of relaxation, which though you reduce, yet, upon the least walking on it, the bone slips out again.

*Wiseman.*

The schirrus may be distinguished by its want of inflammation in the skin, its smoothness, and *slipperiness* deep in the breast.

*Sharp's Surgery.*

Some mistakes may have *slipt* into it; but others will be prevented.

*Pope.*

Thrice rung the bell, the *slipper* knocked the ground,

And the pressed watch returned a silver sound.

*Id.*

I will impute no defect to those two years which have *slipped* by since.

*Swift to Pope.*

Forced to alight, my horse *slipped* his bridle, and ran away.

*Swift.*

The *slipshod* 'prentice from his master's door Had pared the dirt, and sprinkled round the floor.

*Id.*

I ventured to draw back the *slipboard* on the roof, contrived on purpose to let in air.

*Gulliver's Travels.*

Use the most proper methods to retain the ideas you have acquired; for the mind is ready to let many of them *slip*, unless some pains be taken to fix them upon the memory.

*Watts.*

So stood the brittle prodigy; though smooth And *slippery* the materials, yet frost-bound Firm as a rock.

*Couper.*

To rise at noon, sit *slipshod* and undressed,

To read the news, or fiddle, as seems best,

Till half the world comes rattling at his door,

To fill the dull vacuity till four;

And, just when evening turns the blue vault gray,

To spend two hours in dressing for the day.

*Id.*

**SLIP**, in ship-building, is a place lying with a gradual descent on the banks of a river, convenient for **SHIP-BUILDING**; which see.

**SLIPS**, in horticulture, such portions of plants as are slipped off from the stems or branches for the purpose of being planted out as sets. A great number of plants, both of the woody and herbaceous kinds, is propagated by slips, which is effected in the woody kinds by slipping off small young shoots from the sides of the branches, &c., with the thumb and finger, instead of cutting them off with a knife; but there is no material difference, in the success or future growth, between slips and cuttings, only the former in small young shoots is more proper to be slipped off by the hand, which, in numerous small shrubby plants, will grow; but it is more commonly practised in the lower ligneous plants, such as sage, winter-savory, hyssop, thyme, southern-wood, rosemary, rue, lavender, and others of

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slow shrubby growths. The best season of the year for effecting the work is generally the spring and beginning of summer, though many sorts will grow if planted at almost any time, from the spring to the latter end of the summer, as shown in speaking of their culture. In performing the work of slipping, in these sorts, the young shoots of but one year's growth, and in many sorts the shoots of the year, should be chosen as growing the most readily, even when to plant the same summer they are produced, especially the hard-wooded kinds: but, in the more soft-wooded plants, the slips of one year's growth will also often readily grow; being careful always to choose the moderately-growing side-shoots situated on the outward part of the plants, from three to six or eight inches long, slipping them off close to the branches, and clearing off the lower leaves; then planting them in a shady border, if in summer, and watered, or so as they can be occasionally shaded in hot sunny weather, especially small slips, inserting the whole two parts of three into the ground, giving occasional water in dry warm weather, till properly rooted; and then towards autumn, or in the spring following, transplanting them where they are to remain: but, in planting slips of the shoots of tender shrubby exotics of the greenhouse and stove, many sorts require the aid of a hot-bed or bark-bed, to promote their emitting roots more effectually, as shown in their respective culture; but some others of the shrubby kinds, such as geraniums, will root freely in the natural earth in summer; and many of the herbaceous tribe, producing bottom-rooted offsets for slips, as aloes, &c., also readily grow, either with or without a hot-bed; but, where there is the convenience of hot-beds in which to plunge the pots of slips of tender plants, it runs them off more expeditiously; and most hot-house plants in particular require that assistance. But many shrubby plants, growing into large bunches from the root of the small under-shrubby kinds, as thyme, savory, hyssop, sage, &c., as well as those of larger growth, as roses, spiræas, raspberries, and numerous other sorts, may be slipped quite to the bottom into separate plants, each furnished with roots, and planted either in nursery rows, or at once where they are to remain.

As to the slipping of herbaceous plants, various sorts multiply by the roots, &c., into large bunches, which may be slipped into many separate plants, by slipping off the increased suckers or offsets of the root, and in some sorts by the offsets from the sides of the head of the plants, and in a few sorts by slips of their bottom shoots as well as of the stalks and branches in plants of bushy growth; but the greater part by slipping the roots, as in many of the bulbous-rooted tribe, and numerous fibrous-rooted kinds of plants. The slipping of the bulbous plants is performed in summer when their leaves decay, the roots being then taken up, slipping off all the small offsets from the main bulb, which are generally soon planted again in nursery-beds for a year or two. In the fibrous-rooted sorts, the slipping should generally be performed in the spring or early part of autumn, which may be effected either by slipping the outside offsets with roots, as the

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plants stand in the ground ; or more effectually, by taking the whole bunch of plants up, and slipping them into several separate parts, each slip being furnished also with roots, planting them, if small, in nursery-rows for a year, to gain strength ; or such as are strong may be planted at once where they are to remain. See the culture of the different sorts under their respective heads.

SLIPPING, in rural economy, is a term used among animals to denote abortion in them. Thus mares are said to slip their colts, ewes their lambs, and cows their calves. And it has been suggested that cows in calf, by smelling to any flesh, particularly in a putrescent state, are affected by such a nausea as to stimulate the womb to action, and to eject the *fœtus* : this is well known in the north of Scotland, where it is particularly guarded against. It is observed by Mr. Ross, in the twenty-fifth volume of the Annals of Agriculture, that, through the inattention of a game-keeper, there was always horse-flesh lying about his yards, and he had many cows which slipped calves. It is supposed, in the Essex Agricultural Report, that bleeding, when one-third or half gone, is a preventative. When it happens, the abortion should be immediately buried, and the cow kept as widely apart as possible from the herd, and not receive the bull that goes with them. It is considered as certainly infectious. In Sussex it has been supposed by some that the slipping of lambs has been caused by too free a use of rape, as one large sheep-farmer, some years since, lost eighty or ninety in this way ; which was supposed to arise from feeding the ewes upon it about the end of the year, though it had been made use of before without any bad effect of this kind. The ewes in this instance had been hard kept. Ewes are, from some cause or other, very subject to slip their lambs, and of course require much care and attention in this respect.

SLIT, *v. a.*, *pret.* and *part.* slit and slitted. Saxon *slītan*; Goth. and Swed. *slīta*. To cut longwise ; a long cut or opening.

To make plants medicinable, *slit* the root, and infuse into it the medicine, as hellebore, opium, scammony, and then bind it up. *Bacon's Natural History*.

In St. James's fields is a conduit of brick, unto which joineth a low vault, and at the end of that a round house of stone ; and in the brick conduit there is a window, and in the round house a slit or rift of some little breadth : if you cry out in the rift, it will make a fearful roaring at the window. *Bacon*.

The deers of Arginusada had their ears divided, occasioned at first by *slitting* the ears.

*Browne's Vulgar Errors*.

Had it hit

The upper part of him, the blow  
Had *slit* as sure as that below.

*Hudibras*.

A liberty might be left to the judges to inflict death, or some notorious mark, by *slitting* the nose, or brands upon the cheeks. *Temple*.

Where the tender rinds of trees disclose  
Their shooting gems, a swelling knot there grows :  
Just in that place a narrow *slit* we make,  
Then other buds from bearing trees we take ;  
Inserted thus, the wounded rind we close.

*Dryden*

I found, by looking through a *slit* or oblong hole, which was narrower than the pupil of my eye, and

held close to it parallel to the prisms, I could see the circles much distincter, and visible to a far greater number than otherwise.

*Newton*.

If a tinned or plated body, which, being of an even thickness, appears all over of an uniform colour, should be *slit* into threads, or broken into fragments of the same thickness with the plate, I see no reason why every thread or fragment should not keep its color.

*Id. Opticks*.

We *slit* the preternatural body open.

*Wiseman's Surgery*.

He took a freak

To *slit* my tongue, and make me speak. *Swift*.

SLIVE, or SLI'VER, *v. a.* Sax. *plīfan*. To split ; divide, or tear off longwise. Obsolete

Liver of blaspheming Jew ;

Gall of goat and slips of yew,

*Slivered* in the moon's eclipse. *Shakspeare. Macbeth*.

There on the pendent boughs her coronet weed

Clambering to hang, an envious *sliver* broke,

When down her weedy coronet and herself

Fell in the weeping brook. *Id. Hamlet*.

SLOANE (Sir Hans), bart., an eminent physician and naturalist, was of Scottish extraction, his father Alexander Sloane being at the head of that colony of Scots which king James VI. settled in the north of Ireland, where our author was born, at Killieagh, on the 16th of April 1660. At a very early period he displayed a strong inclination for natural history ; and, this propensity being encouraged by a suitable education, he employed those hours which young people generally lose in trifling amusements in appropriate studies. When about sixteen he was attacked by a spitting of blood, which threatened danger, and interrupted the regular course of his studies for three years. Upon this he laid down for himself a regimen of temperance ; by strictly observing which he was enabled to prolong his life beyond the ordinary bounds. On his recovery he resolved to perfect himself in the different branches of medicine, and with this view went to London. On his arrival he became a pupil to the great Stafforth, an excellent chemist, bred under the illustrious Stahl ; and soon gained a perfect knowledge of the composition and preparation of the various medicines then in use. He also studied botany at Chelsea, and attended the public lectures on anatomy and physic. His chief merit, however, was his knowledge of natural history ; and this introduced him early to the acquaintance of Mr. Boyle and Mr. Ray, two of the most eminent naturalists of that age. His intimacy with these distinguished characters continued as long as they lived ; and, as he communicated to them every object of curiosity that attracted his attention, his observations often excited their admiration. After studying four years in London Mr. Sloane determined to visit foreign countries for improvement. With this view he set out for France in the company of two other students, and, having crossed to Dieppe, proceeded to Paris. In the way thither they were elegantly entertained by the famous M. Lemery the elder ; and in return Mr. Sloane presented that eminent chemist with a specimen of four different kinds of phosphorus, of which, upon the credit of other writers, M. Lemery had treated in his book of chemistry, though he had never seen any of them. See *LEMERY*. At Paris Mr. Sloane attended the hos-

pitals, heard the lectures of Tournefort, De Verney, and other eminent masters; and visited all the literati, who received him with particular marks of esteem. From Paris he went to Montpelier; and, being furnished with letters from M. Tournefort to M. Chirac, then chancellor of that university, he found easy access to all the learned men of the province, particularly to M. Magnol, whom he accompanied in his botanical excursions in the environs of that city. Having here found an ample field for contemplation suited to his taste, he took leave of his two companions, who went into Italy. After spending a year in collecting plants he travelled through Languedoc with the same design; and, passing through Thoulouse and Bourdeaux, returned to Paris, where he made a short stay. In 1684 he returned to England. On his arrival in London he called for his two illustrious friends, Mr. Ray and Mr. Boyle, to communicate to them the discoveries he had made. The latter he found at home, but the former had retired to Essex, to which place Mr. Sloane transmitted a great variety of plants and seeds, which Mr. Ray has described in his History of Plants, and for which he makes a proper acknowledgment. Not long after this he was proposed by Dr. Martin Lister as a candidate to be admitted a member of the Royal Society, and was elected on the 21st January 1685. He soon after communicated some curiosities to the society. On the 12th April 1687 he was chosen a fellow of the college of physicians in London. On the 12th September he embarked at Portsmouth for Jamaica with the duke of Albemarle, who had been appointed governor of that island, in quality of his physician, and arrived on the 19th December. Here a new field was opened for discoveries in natural productions; but the duke of Albemarle died soon after he landed, and the duchess determined to return to England as soon as possible. As Dr. Sloane could not leave her grace in her distress, whilst the rest of her retinue were preparing for their departure, he improved the interval in making collections of natural curiosities; so that, though his whole stay at Jamaica was not above fifteen months, he brought together such a prodigious number of plants, that, on his return to England, Mr. Ray was astonished that one man could procure, in so short a space, so vast a variety. On his arrival in London he applied himself to the practice of his profession; and soon became so eminent that he was chosen physician to Christ's Hospital on the 17th October 1694; and this office he held till 1730, when, on account of his great age, he resigned it. He constantly applied the money he received for his trouble to the relief of those who were the greatest objects of compassion in the hospital. He had been elected secretary to the Royal Society on the 30th of November 1693; and upon this occasion he revived the publication of the Philosophical Transactions, which had been omitted for some time. He continued to be the editor of this work till 1712; and the volumes which appeared during that period are monuments of his industry and ingenuity, many of the pieces in them being written by himself. In the mean time he published Catalogus Plantarum quæ in Insula Jamaica sponte prove-

nient, &c., seu Prodromi Historiæ Naturalis pars prima, which he dedicated to the Royal Society and College of Physicians. In the statistical part of this book are some remarks relative to the management of the slaves of the island which we cannot pass over, especially as the question of the slave trade still calls for all the vigilance of the Christian moralist. The following, amongst others, are Sloane's words:—‘The punishments for crimes of slaves are usually for rebellions, burning them, by nailing them down on the ground with crooked sticks on every limb, and then applying the fire by degrees from the feet and hands, burning them gradually up to the head, whereby their pains are extravagant. For crimes of a lesser nature, gelding, or chopping off half of the foot with an axe. These punishments are suffered by them with great constancy.’ The author proceeds as coolly to describe ‘usual’ whipping and other punishments, and concludes thus:—‘After they are whipped till they are raw, some put on their skins pepper and salt to make them smart; at other times their masters will drop melted wax on their skins, and use several very exquisite torments. These punishments are sometimes inherited by the blacks, who are a very perverse generation of people; and, though they appear harsh, yet are scarcely equal to some of their crimes, and inferior to what punishments other European nations inflict on their slaves in the East Indies, as may be seen by Moquet and other travellers.’ We put these words on record chiefly to show what a savage man may become to man; and how a benevolent mind, like Sir Hans Sloane's, could be inured to the sight of such enormities and the reasoning of the planters until it approved of them. About the same time he formed the plan of a public dispensary, where the poor might be furnished at prime cost with medicines, which he afterwards carried into execution with the assistance of the College of Physicians. He was continually enriching and enlarging his cabinet of curiosities; and the fame which, in the course of a few years, it had acquired, brought every thing that was curious in art or nature to be first offered to him for purchase. In 1701 it was greatly augmented upon the death of William Courten, esq., who had employed much of his time and fortune in collecting rarities, and who bequeathed the whole to Dr. Sloane on condition of his paying certain debts and legacies with which he had charged it. These terms our author accepted, and he executed the will of the donor with the most scrupulous exactness. About 1706 he became acquainted with the celebrated Sydenham; who contracted so warm an affection for him that he took him into his house, and recommended him to his patients. In 1707 the first volume of his Natural History of Jamaica appeared in folio, though the publication of the second was delayed till 1725. By this very useful and magnificent work the *materia medica* was enriched with a great number of excellent drugs not before known. In 1708 the doctor was elected a foreign member of the Royal Academy of Sciences at Paris; an honor so much the greater as we were then at war with France, and the queen's consent was necessary before he could accept it. In proportion as his

credit rose among the learned his practice increased among the people of rank: queen Anne herself frequently consulted him, and in her last illness was bled by him. On the accession of George I., that prince, on the 3d of April 1716, created the doctor a baronet, and made him physician general to the army, in which station he continued till 1727, when he was appointed physician in ordinary to George II. He attended the royal family till his death, and was particularly favored by queen Caroline. In the mean time he had been unanimously chosen one of the elects of the College of Physicians, June 1st, 1716; and he was elected president on September 30th, 1719, an office which he held for sixteen years. During that period he not only gave the highest proofs of his zeal and assiduity in the discharge of his duty, but in 1721 made a present to that society of £100; and so far remitted a very considerable debt which the corporation owed him as to accept it in such small sums as were least inconvenient to the state of their affairs. Sir Hans was no less liberal to other learned bodies. He had no sooner purchased the manor of Chelsea than he gave the company of apothecaries the entire freehold of their botanical garden there, upon condition only that they should present yearly to the Royal Society fifty new plants, till the number should amount to 2000, which was completed in 1761. He gave, besides, several other considerable donations for the improvement of this garden; the situation of which, so near the capital, was such as to render it very useful as an excellent school for young botanists. On the death of Sir Isaac Newton, in 1727, Sir Hans was raised to the presidency of the Royal Society. He made the Society a present of 100 guineas; caused a bust of king Charles II., its founder, to be erected in the great hall where it met; and procured Sir Godfrey Copley's benefaction of a medal, of the value of five guineas, to be annually given as an honorary mark of distinction to the person who communicates the best experiments to the Society. In these and similar exertions for the benefit of that Society he employed his time from 1727 to 1740, when, at the age of eighty, he resigned the presidency, much against the inclination of that respectable body, who, in a public assembly, thanked him for the eminent services he had rendered them. In January 1741 he began to remove his library and his cabinet of rarities from his house in Bloomsbury to that at Chelsea; and on the 12th March following, having settled all his affairs, he retired thither himself, to enjoy in tranquillity the remains of a well-spent life. He did not, however, bury himself in solitude; but, during his retreat, presented to the public such useful remedies as success had warranted, during the course of a long practice. Among these is the efficacious receipt for distempers in the eyes, and his remedy for the bite of a mad dog. During the whole course of his life, Sir Hans had lived with so much temperance as had preserved him from feeling the infirmities of old age; but in his ninetieth year he began to complain of pains, and to be sensible of a universal decay. He often said that the approach of death brought no terrors along

with it; that he had long expected the stroke and that he was prepared to receive it whenever the great author of his being should think fit. After an illness of three days he died on the 11th January 1752, and was interred on the 18th at Chelsea, in the same vault with his lady; the solemnity being attended with the greatest concourse of people, of all ranks and conditions, that had ever been seen on such an occasion. Sir Hans, being extremely solicitous lest his cabinet of curiosities, which he had taken so much pains to collect, should be again dissipated at his death, and being at the same time unwilling that so large a portion of his fortune should be lost to his children, he bequeathed it to the public, on condition that £20,000 should be made good by parliament to his family. This sum, though large in appearance, was scarcely more than the intrinsic value of the gold and silver medals, the ores and precious stones, that were found in it; for in his last will he declares that the first cost of the whole amounted at least to £50,000. Besides his library, consisting of more than 50,000 volumes, 347 of which were illustrated with cuts finely engraven and colored from nature, there were 3560 MSS., and a vast number of rare and curious works of every kind. The parliament accepted the legacy, and fulfilled the conditions.

SLOANEA, in botany, the sappodillo tree, a genus of the monogynia order, and polyandria class of plants; natural order fiftieth, amentaceæ: cor. pentapetalous: cal. pentaphylloous and deciduous; the stigma is perforated; the berry is corticose, echinata, polyspermous, and gaping. There are two species:—1. S. dentata, the sappodillo tree; and 2. S. emarginata, the apeiba of Brasil.

To SLOCKEN is the verb universally used in the Scottish dialect. To Slock would hardly be understood. \*

SLOE, n. s. Sax. *slaē*; Belgic *slaē*; Swed. *sla*. The fruit of the blackthorn; a small wild plum.

When you fell your underwoods, sow haws and sloes in them, and they will furnish you, without doing of your woods any hurt. *Mortimer's Husbandry*.

The fair pomegranate might adorn the pine,  
The grape the bramble, and the sloe the vine.

*Blackmore.*

SLOE. See PRUNUS.

A SLOOP is furnished with only one mast, the mainsail of which is attached to a gaff above, or to the mast on its foremast edge, and to a long boom below, by which it is occasionally shifted to either quarter.

SLOOP OF WAR is a name given to the smallest vessels of war except cutters. They are either rigged as ships-or snows.

SLOP, v. a. & n. s. Belg. *slob*, *sleb*, mire. To make a puddle; drink grossly or greedily: mean and vile liquor of any kind.

But thou, whatever slops she will have bought,  
Be thankful. *Dryden's Juvenal.*

The sick husband here wanted for neither slops nor doctors. *L'Estrange.*

SLOP, n. s. Sax. *plop*; Belg. *sloove*, a covering. Trowsers; open breeches.

What said Mr. Dombledon about the sattin for my short cloak and slops? *Shakspeare. Henry IV.*

**SLOPE**, *adj.*, *n. s.*, *v. a.* & *s.* ‘This word,’ says Dr. John-  
**SLOPE'NESS**, *n. s.* [v. n.] son, ‘is not de-  
**SLOPE'WISE**, *adj.* rived from any  
**SLOPINGLY**, *adv.* satisfactory original.’ Junius omits it: Skinner  
derives it from Dutch *slap*, lax; and derives it  
from the curve of a loose rope. Perhaps its ori-  
ginal may be latent in Dutch *loopen*, to run; slope  
being easy to the runner. Thomson refers it to  
**SLIP**. Oblique; not perpendicular. Generally  
used of acclivity or declivity, forming an angle  
greater or less with the plane of the horizon: the  
derivatives all corresponding.

Though bladed corn be lodged, and trees blown  
down,

Though palaces and pyramids do *slope*  
Their heads to their foundations. *Id. Macbeth.*

Where there is greater quantity of water, and space  
enough, the water moveth with a *sloper* rise and fall.  
*Bacon.*

Growing upon *slopes* is caused for that moss, as it  
cometh of moisture, so the water must but slide, not  
be in a pool. *Id.*

The Italians give the cover a graceful pendance  
of *slopeness*, dividing the whole breadth into nine  
parts, whereof two shall serve for the elevation of the  
highest ridge. *Wotton's Architecture.*

The Wear is a firth, reaching *slopeweise* through the  
Ose from the land to low-water mark, and having in  
it a bent or cod with an eye-hook; where the fish  
entering, upon their coming back with the ebb, are  
stopped from issuing out again, forsaken by the wa-  
ter, and left dry on the ose. *Carew.*

These atoms do not descend always perpendicu-  
larly, but sometimes *slopingly*. *Digby on the Soul.*

Murmuring waters fall  
Down the *slope* hill's, dispersed, or in a lake,  
That to the fringed bank with myrtle crowned  
Her crystal mirror holds, unite their streams. *Milton.*

Uriel

Returned on that bright beam, whose point now  
raised  
Bore him *slope* downward to the sun, now fallen. *Id.*

On each hand the flames,  
Driven backward, *slope* their pointed spires, and  
roll'd  
In billows, leave i' the' midst a horrid vale. *Id.*

There is a handsome work of piles made *sloping*  
athwart the river, to stop the trees which are cut  
down and cast into the river. *Browne's Travels.*

Betwixt the midst and these the gods assigned  
Two habitable seats for human kind;  
And cross their limits cut a *sloping way*,  
Which the twelve signs in beauteous order sway. *Dryden.*

There is a straight hole in every ant's nest half an  
inch deep, and then it goes down *sloping* into a place  
where they have their magazine. *Addison's Spectator.*

My lord advances with majestick mien,  
And when up ten steep *slopes* you've dragg'd your  
thighs,  
Just at his study door he'll bless your eyes. *Pope.*

All night I slept, oblivious of my pain;  
Aurora dawned, and Phœbus shined in vain:  
Nor, till oblique he *sloped* his evening ray,  
Had Somnus dried the balmy dews away. *Id. Odyssey.*

On the fourth aspect of a *sloping* hill,  
Whose skirts meandering Peneus washes still,

Our pious lab'rer passed his youthful days  
In peace and charity, in prayer and praise. *Harte.*

**SLOTH**, *n. s.* } Sax. *rlepð*, *rlepð*;  
**SLOTH'FUL**, *adj.* } Swed. *slott*. It might  
not improperly be writ-  
ten sloath, but that it seems better to regard the  
orthography of the primitive slow. Slowness;  
tardiness; laziness: the adjective and noun sub-  
stantive following corresponding.

He that is *slothful* in his work, is brother to him  
that is a great waster. *Prov. xviii. 9.*

The desire of the *slothful* killeth him; for his hands  
refuse to labour. *Id. xxi. 25.*

To trust to labour without prayer, argueth impurity  
and prophaneness; it maketh light of the providence  
of God: and, although it be not the intent of a re-  
ligious mind, yet it is the fault of those men whose  
religion wanteth light of a mature judgment to direct  
it, when we join with our prayer *slothfulness*, and  
neglect of convenient labour. *Hooker.*

These cardinals trifle with me: I abhor  
This dilatory *sloth* and tricks of Rome. *Shakspeare. Henry VIII.*

False of heart, light of ear, bloody of hand,  
Hog in *sloth*, fox in stealth. *Id. King Lear.*

They change their course to pleasure, ease, and  
*sloth*. *Milton.*

To vice industrious; but to nobler deeds  
Timorous and *slothful*. *Id.*

Flora commands those nymphs and knights,  
Who lived in *slothful* ease and loose delights,  
Who never acts of honour durst pursue,  
The men inglorious knights, the ladies all untrue. *Dryden.*

The very soul of the *slothful* does effectually but  
lie drowsing in his body, and the whole man is to-  
tally given up to his senses. *L'Estrange.*

The *sloth* is an animal of so slow a motion that he  
will be three or four days at least in climbing up and  
coming down a tree; and to go the length of fifty  
paces on plain ground requires a whole day. *Grew.*

Industry approached,  
And roused him from his miserable *sloth*. *Thomson's Autumn.*

Another is deaf to all the motives to piety, by in-  
dulging an idle *slothful* temper. *Law.*

**SLOT**, in the sportsman's language, is used to  
express the mark of the foot of a stag or other  
animal proper for the chase in the clay or earth,  
by which they are able to guess when the animal  
passed, and which way he went. If the slot be  
large, deep printed in the ground, and with an  
open cleft, and if, added to these marks, there is  
a large space between mark and mark, it is cer-  
tain that the stag is an old one. If there be the  
slots or treadings of two, the one long and the  
other round, and both of one size, the long slot  
is always that of the large animal. There is also  
another way of knowing the old ones from the  
young ones by the treading; which is, that the  
hinder feet of the old ones never reach to their  
fore feet, whereas those of the young ones do.

**SLOUCH**, *n. s.* Dan. *sløff*; Swed. *slutt*, stupid.  
A downcast look; depression of the head. In  
Scotland, an ungainly gait, as also the person  
whose gait it is.

Begin thy carols then, thou vaunting *slouch*;  
Be thine the oaken staff, or mine the pouch. *Gay.*

Our doctor has every quality that can make a man  
useful; but alas! he hath a sort of *slouch* in his walk.  
*Swift.*

*SLOVEN*, n. s. } Belg. *sloef*; Welsh *yolven*,  
*SLOV'ENLY*, adv. } nasty, shabby. A man neg-  
*SLOV'ENY*, n. s. } ligent of cleanliness; a man  
 dirtily dressed: the adverb corresponding: slo-  
 venry is dirtiness; negligence of appearance.

The ministers came to church in handsome holiday apparel, and that himself did not think them bound by the law of God to go like *slovens*. *Hooker.*

Our gayness and our guilt are all besmirched With rainy marching in the painful field : There's not a piece of feather in our host, And time hath worn us into *sloveny*.

*Shakspeare. Henry V.*

*Slovenliness* is the worst sign of a hard student, and civility the best exercise of the remiss; yet not to be exact in the phrase of compliment, or gestures of courtesy. *Wotton.*

Affect in things about thee cleanliness,  
 That all may gladly board thee as a flower :

*Slovens* take up their stock of noisomeness Beforehand, and anticipate their last hour. *Herbert.*

Esop at last found out a *slovenly* lazy fellow, lolling at his ease, as if he had nothing to do.

*L'Estrange.*

As I hang my clothes on somewhat *slovenly*, I no sooner went in but he frowned upon me. *Pope.*

You laugh, half beau, half *sloven*, if I stand ; My wig half powder, and all snuff my band. *Id.*

Their methods various, but alike their aim ; The *sloven* and the sopling are the same. *Young.*

*SLOUGH*, n. s. } Sax. *flog*. A deep miry

*SLOUGH'y*, adj. } place; slimy hole; slimy skin or covering; the part that separates from a foul sore: *sloughty* is boggy; miry.

Thy fates open their hands, let thy blood and spirit embrace them; and, to insure thyself to what thou art like to be, cast thy humble *slough*, and appear fresh. *Shakspeare. Twelfth Night.*

When the mind is quickened, The organs, though defunct and dead before, Break up their drowsy grave, and newly move, With casted *slough*, and fresh legerity. *Shakspeare.*

The Scots were in a fallow field, whereinto the English could not enter, but over a cross ditch and a *slough*: in passing whereof many of the English horse were plunged, and some mired. *Hayward.*

The ways being foul, twenty to one He's here stuck in a *slough*, and overthrown. *Milton.*

Oh let not sleep my closing eyes invade In open plains, or in the secret shade,

When he, renewed in all the speckled pride Of pompous youth, has cast his *slough* aside;

And in his summer livery rolls along Erect, and brandishing his fork tongue. *Dryden.*

A carter had laid his waggon fast in a *slough*. *L'Estrange.*

The *slough* of an English viper, that is, the cuticula, they cast off twice every year, at spring and fall: the separation begins at the head, and is finished in twenty-four hours. *Grew.*

The body, which we leave behind in this visible world, is as the womb or *slough* from whence we issue and are born into the other. *Grew's Cosmologia.*

That custom should not be allowed of cutting scraws in low grounds *sloughty* underneath, which turn into bog. *Swift.*

At the next dressing I found a *slough* come away with the dressings, which was the sordes. *Wiseman on Ulcers.*

*SLOW*, adv., v. a. & adj. } Sax. *flap*, *pleap* ;

*SLOW'LY*, adv. } Swed. *slo*; Goth. *slua*.

*SLOW'NESS*, n. s. } Not swift; not quick of motion; not having velocity; late; dull;

*sluggish*: the verb (*obsolete*) means to delay; *procrastinate*: the adverb and noun substantive corresponding.

I am *slow* of speech, and a *slow* tongue.

*Erod. iv. 10.*

He that is *slow* to wrath is of great understanding. *Prov.*

The Lord is merciful, and *slow* to anger.

*Common Prayer.*

Tyrants use what art they can to increase the *slowness* of death. *Hooker.*

Now do you know the reason of this haste ?

—I would I knew not why it should be *slowed*.

*Shakspeare.*

The poor remnant of human seed peopled their country again *slowly*, by little and little. *Bacon.*

This *slow*-paced soul, which late did cleave T' a body, and went but by the body's leave, Twenty perchance or thirty miles a day, Dispatches in a minute all the way T'wixt heaven and earth. *Donne.*

Providence hath confined these human hearts, that what any invention hath in the strength of its motion, is abated in the *slowness* of it: and what it hath in the extraordinary quickness of its motion, must be allowed for in the great strength that is required unto it. *Wilkins's Mathematical Magick.*

Me thou thinkest not *slow*,

Who since the morning hour set out from heaven, Where God resides, and on mid-day arrived In Eden, distance inexpressible ! *Milton.*

This day's death denounced, if aught I see, Will prove no sudden but a *slow*-paced evil, A long day's dying to augment our pain. *Id.*

Though we have found formed snakes in the belly of the *cæcilia*, or *slow-worm*, yet may the viper emphatically bear the name. *Browne's Vulgar Errors.*

Fixed on defence, the Trojans are not *slow* To guard their shore from an expected foe. *Dryden.*

Our fathers bent their painful industry

To check a monarchy that *slowly* grew ;

But did not France or Holland's fate foresee, Whose rising power to swift dominion flew. *Id.*

Where the motion is so *slow* as not to supply a constant train of fresh ideas to the senses, the sense of motion is lost. *Locke.*

The chapel of St. Laurence advances so very *slowly* that 'tis not impossible but the family of Medicis may be extinct before their burial place is finished. *Addison on Italy.*

The *slow* of speech make in dreams unpremeditated harangues, or converse readily in languages that they are but little acquainted with. *Addison.*

Christ would not heal their infirmities, because of the hardness and *slowness* of their hearts, in that they believed him not. *Bentley's Sermons.*

The gnome rejoicing bears her gift away, Spreads his black wings, and *slowly* mounts to day. *Pope.*

The politick and wise Are *slow* things with circumspective eyes. *Id.*

For eight *slow*-circling years by tempests tost. *Id.*

Motion is the absolute mode of a body, but *swiftness* or *slowness* are relative ideas. *Watts.*

*SLUB'BER*, v. a. } From lubber,

*SLUBBERDEGUL'ION*, n. s. } or Belgic *stubbelen* or *slabben*. Bedaub; sully; to do any thing lazily, or with idle hurry: *slubberdegullion* is a Hudibrastic word for a sorry dirty wretch.

Nature shewed she doth not like men who *slubber* up matters of mean account. *Sidney.*

You must be content to *slubber* the gloss of your new fortunes with this more stubborn and boisterous expedition. *Shakspeare.*

Bassanio told him he would make some speed  
Of his return; he answered, do not so,  
*Slubber* not business for my sake.

*Shakspeare. Merchant of Venice.*

A man of secret ambitious ends, and proportionate counsels, smothered under the habit of a scholar, and *slubbered* over with a certain rude and clownish fashion, that had the semblance of integrity.

*Wotton.*

Quoth she, although thou hast deserved,  
Base *slubberdeggullion*, to be served  
As thou didst vow to deal with me,  
If thou hadst got the victory. *Hudibras.*

As they are *slubbered* over, the malignity that remains will show itself in some chronic disease. *Wiseman's Surgery.*

**SLUDGE**, *n. s.* Sax. *plog*, slough. Mire ; dirt mixed with water.

The earth I made a mere soft *sludge* or mud. *Mortimer.*

**SLUG**, *n. s.* Dan. *slug*; Belg. *sluk*, *stock*, a glutton, and thence one that has the sloth of a glutton. An idler; drone; a slow, heavy, lazy wretch; a kind of snail; a hindrance; obstruction.

All he did was to deceive good knights,  
And draw them from pursuit of praise and fame,  
To *slug* in sloth and sensual delights,  
And end their days with irrenowned shame. *Faerie Queene.*

*Sluggish* idleness, the nurse of sin,  
Upon a slothful ass he chose to ride. *Id.*

He lay not all night *slugging* in a cabin under his mantle, but used commonly to keep others waking to defend their lives. *Spenser.*

The dull billows, thick as troubled mire,  
Whom neither wind out of their seat could force,  
Nor tides did drive out of their *sluggish* source. *Id.*

Fie ! what a *slug* is Hastings, that he comes not ! *Shakspeare.*

Cry mercy, lords, and watchful gentlemen,  
That you have taken a tardy *sluggard* here. *Id. Richard III.*

Rather see the wonders of the world abroad,  
Than, living dully *sluggardized* at home,  
Wear out thy youth with shapeless idleness. *Shakspeare.*

Usury dulls and damps all improvements, where-in money would be stirring, if it were not for this *slug*. *Bacon.*

The most of mankind are inclined by her thither, if they would take the pains; no less than birds to fly and horses to run: which if they lose, it is through their own *sluggishness*, and by that means become her prodigies, not her children. *Ben Jonson.*

This mightier sound shall make  
The dead to rise,  
And open tombs and open eyes,  
To the long *sluggards* of five thousand years. *Cowley.*

One, bolder than the rest,  
With his broad sword provoked the *sluggish* beast. *Waller.*

Up, up, says Avarice; thou snor'st again,  
Stretches thy limbs, and yawn'st, but all in vain:  
The tyrant Lucre no denial takes;  
At his command the unwilling *sluggard* wakes. *Dryden.*

Sprightly May commands our youth to keep  
The vigils of her night, and breaks their *sluggard*  
sleep. *Id.*

One went *slugging* on with a thousand cares. *L'Estrange.*

It is of great moment to teach the mind to shake

off its *sluggishness*, and vigorously employ itself about what reason shall direct. *Locke.*

Matter, being impotent, *sluggish*, and inactive, hath no power to stir or move itself. *Woodward.*

**SLUG**, *n. s.* Sax. *fleog*, a hammer-head. A particular kind of metal shot.

When fractures are made with bullets or *slugs*, there the scalp and cranium are driven in together. *Wiseman's Surgery.*

As, forc'd from wind-guns, lead itself can fly,  
And pond'rous *slugs* cut swiftly through the sky. *Pope.*

**SLUICE**, *n. s. & v. a.* { Fr. *escluse*; Italian *Slu'cix adj.* } *sluca*; Belgic *sluse*.

A watergate; floodgate; or vent for water: to emit by floodgates : sluicy, is falling in streams.  
Like a traitor coward,

*Sluic'd* out his innocent soul through streams of blood. *Shakspeare.*

Divine Alpheus, who, by secret *sluice*,  
Stole under seas to meet his Arethuse. *Milton.*

Veins of liquid ore *sluiced* from the lake. *Id.*

If we receive them all, they were more than seven;  
If only the natural *sluices*, they were fewer. *Browne's Vulgar Errors.*

You wrong me, if you think I'll sell one drop,  
Within these veins for pageants; but let honour  
Call for my blood, I'll *sluice* it into streams;  
Turn fortune loose again to my pursuit,  
And let me hunt her through her embattled foes,  
In dusty plains; there will I be the first. *Dryden's Spanish Fryar.*

And oft whole sheets descend of *sluicy* rain,  
Sucked by the spungy clouds from off the main:  
The lofty skies at once come pouring down,  
The promised crop and golden labours drown. *Dryden.*

As waters from her *sluices*, flowed  
Unbounded sorrow from her eyes. *Prior.*  
Each *sluice* of affluent fortune opened soon,  
And wealth flow'd in at morning, night, and noon. *Harte.*

A **SLUICE** is a frame of timber, stone, or other matter, serving to retain and raise the water of a river, &c., and on occasion to let it pass. Such is the sluice of a mill, which stops and collects the water of a rivulet, &c., to let it fall at length in the greater plenty upon the mill wheel; such also are those used as vents or drains to discharge water off land. And such are the sluices of Flanders, &c., which serve to prevent the waters of the sea from overflowing the lower lands. Sometimes there is a kind of canal enclosed between two gates or sluices, in artificial navigations, to save the water, and render the passage of boats equally easy and safe, upwards and downwards, as in the sluices of Briare in France, which are a kind of massive walls, built parallel to each other, at the distance of twenty or twenty-four feet, closed with strong gates at each end, between which is a kind of canal or chamber, considerably longer than broad; wherein a vessel being enclosed, the water is let out at the first gate, by which the vessel is raised fifteen or sixteen feet, and passed out of this canal into another much higher. By such means a boat is conveyed out of the Loire into the Seine, though the ground between them rise above 150 feet higher than either of those rivers. See CANAL. Sluices are made different ways, according to the use for which they are intended; when they

serve for navigation, they are shut with two gates presenting an angle towards the stream; when they are made near the sea, two pairs of gates are made, the one to keep the water out and the other in, as occasion requires. In this case the gates towards the sea present an angle that way, and the others the contrary; and the space enclosed by those gates is called the chamber. When sluices are made in the ditches of a fortress, to keep up the water in some parts, instead of gates, shutters are made so as to slide up and down in grooves; and, when they are made to raise an inundation, they are then shut by means of square timbers let down in cullasses, so as to lie close and firm.

An engineer ought always to have in his view that the faults committed in the construction of sluices are almost always irreparable. We shall therefore lay down some rules, from Belidor, for avoiding any oversights of this kind:—1. In order to adjust the level of the sluice-work with the utmost exactness, the engineer ought to determine how much deeper it must be than a fixed point; and this he should mark down in his draught, in the most precise terms possible. 2. When the proper depth is settled, the foundation is next to be examined; and here the engineer cannot be too cautious, lest the apparent goodness of the soil deceive him; if the foundation is judged bad, or insufficient to bear the superstructure, it must be secured by driving piles, or a grate-work of carpentry. 3. There should be engines enough provided for draining the water; and these should be entirely under the direction of the engineer, who is to take care that they are so placed as not to be an obstacle to the work; and also cause proper trenches to be cut, to convey the water clear off from the foundation. 4. When the sluice is to be built in a place where the workmen will be unavoidably incommoded by the waters of the sea, &c., all the stones for the mason-work, as well as the timbers for that of carpentry, should be prepared beforehand; so that, when a proper season offers for beginning the work, there remains nothing to be done but to fix every thing in its place.

**SLUM'BER**, *v. n., v. a.* } Sax. *plumepnan*;

**SLUM'BEROUS**, *adj.* [ & *n. s.* ] Belg. *sluymeren* ;

**SLUM'BERY**. } Swed. *slumru*. To sleep lightly; to be not awake, nor in profound sleep: be in a state of supineness or lethargy: to lay to sleep; stupify; stun: as a noun substantive, light sleep; repose: the adjectives corresponding.

God speaketh, yet man perceiveth it not: in a dream, in a vision of the night, when deep sleep falleth upon men, in *slumberings* upon the bed.

*Job xxxiii. 15.*

He that keepeth Israel shall neither *slumber* nor sleep. *Psalms.*

I then up he took the *slumbered* senseless corse, And, ere he could out of his swoon awake, Him to his castle brought. *Faerie Queene.*

And for his dreams, I wonder he's so fond To trust the mock'ry of unquiet *slumbers*.

*Shakspeare. Richard III.*

Boy! Lucius! fast asleep! It is no matter; Enjoy the honey-heavy dew of *slumber*.

*Id. Julius Casar.*

A great perturbation in nature! to receive at once

the benefit of sleep, and do the effects of watching. In this *slumbery* agitation, what have you heard her say? *Id. Macbeth.*

To honest a deed after it was done, or to *slumber* his conscience in the doing, he studied other incentives. *Wotton.*

Conscience wakes despair that *slumbered*. *Milton.*

The timely dew of sleep, Now falling with soft *slumb'rous* weight, inclines Our eyelids. *Id.*

Even lust and envy sleep, but love denies Rest to my soul, and *slumber* to my eyes: Three-days I promised to attend my doom, And two long days and nights are yet to come.

*Dryden.*

From carelessness it shall fall into *slumber*, and from a *slumber* it shall settle into a deep and long sleep; till at last, perhaps, it shall sleep itself into a lethargy, and that such an one that nothing but hell and judgment shall awaken it. *South.*

Labour and rest, that equal periods keep; Obedient *shunbers* that can wake and sleep. *Pope.*

While pensive in the silent *slumberous* shade, Sleep's gentle powers her drooping eyes invade; Minerva, life-like, on embodied air Impressed the form of Iphthema. *Id. Odyssey.*

Why *shunbers* Pope, who leads the tuneful train, Nor hears that virtue which he loves complain? *Young.*

**SLUR**, *v. u. & n. s.* Belg. *stoor*, a slut; Dau. *stor*. To sully; soil; bedaub; slight; balk; cheat: used as a noun substantive (metaphorically) for a slight reproach or slander.

What was the publick faith found out for? But to *stur* men of what they fought for? *Hudibras.*

The atheists laugh in their sleeves, and not a little triumph, to see the cause of theism thus betrayed by its professed friends, and the grand argument *slurred* by them, and so their work done to their hands. *Cudworth.*

Studiois to please the genius of the times, With periods, points, and tropes, he *sturs* his crimes. He robbed not, but he borrowed from the poor, And took but with intention to restore. *Dryden.*

Here is an ape made a king for shewing tricks: and the fox is then to put a *stur* upon him, in exposing him for sport to the scorn of the people. *L'Estrange.*

No one can rely upon such an one, either with safety to his affairs, or without a *stur* to his reputation; since he that trusts a knave has no other recompence but to be accounted a fool for his pains. *South's Sermons.*

Come, seven's the main, Cries Ganymede: the usual trick: Seven, *stur* a six; eleven, a nick. *Prior.*

**SLUR**, in music, a mark like the arch of a circle, drawn from one note to another, comprehending two or more notes in the same or different degrees. If the notes are in different degrees, it signifies that they are all to be sung to one syllable; for wind instruments, that they are to be made in one continued breath; and for stringed instruments that are struck with a bow, as a violin, &c., that they are made with one stroke. If the notes are in the same degree, it signifies that it is all one note, to be made as long as the whole notes so connected; and this happens most frequently betwixt the last note of one line and the first of the next; which is particularly called syncopation.

**SLUT, n. s.** { Belg. *slodde*. A dirty woman: the practice of a slut: the adjective and noun substantive following corresponding.

All preparations both for food and lodging, such as would make one detest niggardness, it is so *sluttish* a vice. *Sidney.*

That is only suitable in laying a foul complexion upon a filthy favour, setting forth both in *sluttishness*. *Id.*

Cricket, to Windsor chinnies shalt thou leap; Where fires thou findest unraked, and hearths unswept,

There pinch the maids as blue as bilberry; Our radiant queen hates *sluts* and *sluttiness*. *Shakspeare.*

*Sluttiness* to such' neat excellence opposed, Should make desire vomit emptiness. *Id. Cymbeline.*

Albeit the mariners do covet store of cabins, yet indeed they are but *sluttish* dens that breed sickness in peace, serving to cover stealths, and in sight are dangerous to tear men with their splinters. *Raleigh's Essays.*

These make our girls their *sluttiness* rue, By pinching them both black and blue; And put a penny in their shoe, The house for cleanly sweeping. *Drayton.* She got a legacy by *sluttish* tricks. *Holiday.*

The nastiness of that nation, and *sluttish* course of life, hath much promoted the opinion, occasioned by their servile condition at first, and inferior ways of parsimony ever since. *Browne.*

A man gave money for a black, upon an opinion that his swarthy colour was rather *sluttish* than nature, and the fault of his master that kept him no cleaner. *L'Estrange.*

The frogs were ready to leap out of their skins for joy, till one crafty old *slut* in the company advised them to consider a little better on't. *Id.*

I look on the instinct of this noisome and troublesome creature, the louse, of searching out foul and nasty clothes to harbour and breed in, as an effect of divine providence, designed to deter men and women from *sluttishness* and sordidness, and to provoke them to cleanliness and neatness. *Ray on the Creation.*

The veal's all rags, the butter's turn'd to oil: And thus I buy good meat for *sluts* to spoil. *King.* Slothful disorder filled his stable;

And *sluttish* plenty decked her table. *Prior.*

**SLY, adj.** { Sax. *rl̄s*, slippery; Goth. *slīly*, *adv.* *slag*, artful; Isl. *slagur*. Meant artful; insidious; cunning: the adverb corresponding.

And for I doubt the Greekish monarch *sly*, Will use with him some of his wonted craft. *Fairfax.*

He, closely false and *sly* wise, Cast how he might annoy them most from far. *Id.* For my *sly* wiles and subtle craftiness,

The title of the kingdom I possess. *Hubberd's Tale.* His proud step he scornful turned,

And with *sly* circumspection. *Milton's Paradise Lost.*

Were there a serpent seen with forked tongue, That *sly* glided towards your majesty, It were but necessary you were waked. *Shakspeare.*

Satan, like a cunning pick-lock, *sly* robs us of our grand treasure. *Decay of Piety.*

With this he did a herd of goats controul, Which by the way he met, and *sly* stole; Clad like a country swain. *Dryden.*

May hypocrites, That *sly* speak one thing, another think, Hateful as hell, pleased with the relish weak Drink on unwarmed, till, by enchanting cups Infatuate, they their wily thoughts disclose, And through intemperance grow a while sincere. *Philios.*

By an excellent faculty in minickry, my correspondent can assume my air, and give my taciturnity a *slyness* which diverts more than any thing I could say. *Addison.*

Envy is a cursed plant; some fibres of it are rooted almost in every man's nature, and it works in a *sly* and imperceptible manner. *Watts.*

It is odious in a man to look *sly* and leering at a woman. *Clarissa.*

**SMACK, v. n., v. a., & n. s.** Sax. *rmæckan*; Belg. *smacken*; Goth. *smak*. To have a taste; be tinctured with any particular taste; make a particular noise in kissing: to kiss; to emit a smart quick noise: taste; flavor; tincture: a loud kiss.

Stack please upon hovel; To cover it quickly let owner regard, Lest dove and the cadow, there finding a *smack*, With ill stormy weather do perish thy stack. *Tusser.*

The child, that sucketh the milk of the nurse, learns his first speech of her; the which, being the first injured to his tongue, is ever after most pleasing unto him; insomuch that, though he afterwards be taught English, yet the *smack* of the first will always abide with him. *Spenser.*

All sects, all ages, *smack* of this vice, and he To die for it! *Shakspeare, Measure for Measure.*

He is but a bastard to the time, That doth not *smack* of observation. *Id. King John.*

Your lordship, though not clean past your youth, hath yet some *smack* of age in you, some relish of the saltiness of time, and have a care of your health. *Id. Henry IV.*

He took The bride about the neck, and kissed her lips With such a clamorous *smack*, that at the parting All the church echoed. *Id. Taming of the Shrew.*

So careless flowers, strowed on the water's face, The curled whirlpools suck, *smack*, and embrace, Yet drown them. *Donne.*

I saw the lecherous citizen turn back His head, and on his wife's lip steal a *smack*. *Id.*

It caused the neighbours to rue, that a petty *smack* only of popery opened a gap to the oppression of the whole. *Carew.*

As the Pythagorean soul Runs through all beasts, and fish, and fowl, And has a *smack* of every one, So love does, and has ever done. *Hudibras.*

Trembling to approach The little barrel, which he fears to broach, He' essays the wimble, often draws it back, And deals to thirsty servants but a *smack*. *Dryden's Perseus.*

She kissed with *smacking* lips the snoring lout; For such a kiss demands a pair of gloves. *Gay.*

He gives a *smacking* buss. *Pope.*

More than one steed must Delia's empire feel, Who sits triumphant o'er the flying wheel; And, as she guides it through the admiring throng, With what an air she *smacks* the silken thong! *Young.*

**SMACK, n. s.** Sax. *rmæcca*. A small ship. **SMALAND**, a province of South Sweden, lying between the Baltic and the province of

Halland. It now forms the governments of Jonkioping and Cronoberg, and part of Calmar, having a superficial extent of 7750 square miles, with a population of 315,000. Smaland is well watered by rivers and lakes; of the former, the chief are the Nissa, the Laga, and the Aen; of the latter, the Wetter, the Som, the Vidoester, and the Moekel. There is much picturesque scenery in the neighbourhood of Jonkioping and some other places; but the greater part consists of barren rocks, forests, marshes, and heaths. Wheat and honey are the chief articles of produce; but the chief object is the breeding of cattle in the extensive pastures. The forests and mines furnish materials for a considerable export trade in wood, tar, pitch, iron, and copper, and some silver and lead are occasionally found.

**SMALCALDEN**, a district in the west of Germany, belonging to Hesse-Cassel, but lying considerably to the east of the rest of the electorate. Its territorial extent is 115 square miles; its population 22,000, almost all Lutherans. It is very mountainous, and contains mines of iron and coal, and several brine springs. The exports consist of hardware, potash, and white lead.

**SMALCALDEN**, the chief town of the above district, is situated on a river of the same name, not far from the Werra. It contains a castle, three suburbs, 4700 inhabitants: four miles from the town is a hill called the Stahlberg, with mines of iron. In the neighbourhood also are several salt-works. In the sixteenth century the Protestant princes of the empire held several meetings here, in which they adopted resolutions of great importance; and in 1531 they formed here the famous league to defend the liberties of the empire against the encroachments of Charles V. The well known geographer, Cellarius, was a native of this place. Fifty-six miles south-west of Cassel, and nine north of Meinungen.

**SMALL**, *adj. & n.s.* <sup>1</sup> Sax. *mall*; Belg. *Swed.* **SMALLAGE**, *n.s.* and *Goth. smal*. Little **SMALLCOAT**, in quantity or size; slender; minute: hence pettish; unimportant; weak: **SMALLNESS**, as a noun substantive, a **SMALLPOX**, barbarism for the small or narrow part of a thing: *smallage* is a plant, a species of parsley: the other substantives seem to explain themselves: *smallly* is in a little or low degree.

But whoso sclaundrith oon of these *male* that bidden in me, it spedith to him that a mylne stone of assis be hanged in his necke and he drenchid in the deppesse of the see. *Wiclid. Matt. 18.*

Is it a *small* matter that thou hast taken my husband? *Genesis.*

Your sin and calf I burnt, and ground it very small, till it was as *small* as dust. *Deut. ix. 21.*

After the earthquake a fire, and after the fire a still *small* voice. *1 Kings xix. 12.*

For a *small* moment have I forsaken thee, but with great mercies will I gather thee. *Isa. liv. 7.*

For, lo, I will make thee *small* among the heathen, and despised among men. *Jer. xlxi. 15.*

There arose no *small* stir about that way. *Acts xix. 23.*

A child that is still, and somewhat hard of wit, is never chosen by the father to be made a scholar; or

else, when he cometh to the school, is *smallly* regarded. *Aschan.*

Her garment was cut after such a fashion, that, though the length of it reached to the ankles, yet in her going one might sometimes discern the *small* of her leg. *Sidney.*

The parts in glass are evenly spread, but are not so close as in gold; as we see by the easy admission of light, and by the *smallness* of the weight. *Bacon's Natural History.*

Some men's behaviour is like a verse, wherein every syllable is measured: how can a man comprehend great matters that breaketh his mind too much to *small* observations? *Bacon.*

Narrow man being filled with little shares, Courts, city, church, are all shops of *small* wares; All having blown to sparks their noble fire, And drawn their sound gold ingot into wire. *Donne.*

Into her legs I'd have love's issues fall, And all her calf into a gouty *small*. *Suckling.*

Those waved their limber fans For wings, and *smallest* lineaments exact. *Milton.*

Death only this mysterious truth unfolds, The mighty soul how *small* a body holds. *Dryden's Juvenal.*

Shall he before me sign, whom t'other day A *smallcraft* vessel hither did convey; Where stained with prunes and rotten figs he lay? *Dryden.*

All numeration is but still the adding of one unit more, and giving to the whole together a distinct name, whereby to distinguish it from every *smaller* or greater multitude of units. *Locke.*

The ordinary *smallest* measure we have is looked on as an unit in number. *Id.*

Small-grained sand is esteemed the best for the tenant, and the large for the landlord and land. *Mortimer's Husbandry.*

**Smallage** is raised by slips or seed, which is reddish, and pretty big, of a roundish oval figure; a little more full and rising on one side than the other, and streaked from one end to the other. *Id.*

A *smallcoal* man, by waking one of these distressed gentlemen, saved him from ten years imprisonment. *Spectator.*

The *smallness* of the rays of light may contribute very much to the power of the agent by which they are refracted. *Newton's Opticks.*

When *smallcoal* murmur in the hoarser throat, From smutty dangers guard thy threatened coat. *Gay.*

The danger is less when the quantity of the fluids is too *small*, than when it is too great; for a *smaller* quantity will pass where a larger cannot, but not contrariwise. *Arbuthnot.*

He fell sick of the *smallpox*. *Wiseman.*

*Small* is the subject, but not so the praise. *Pope.*

Go down to the cellar to draw ale or *small* beer. *Swift.*

Good cooks cannot abide fiddling work: such is the dressing of *small* birds, requiring a world of cookery. *Id.*

Knowing, by fame, *small* poets, *small* musicians, *Small* painters, and still *smaller* politicians. *Harte.*

His excellency having mounted on the *small* of my leg, advanced forwards. *Gulliver's Travels.*

**SMALLHOLM**, a parish of Scotland, in Roxburghshire, in the form of an irregular triangle, about four miles long from east to west, and three broad from north to south. The surface exhibits a pleasing variety of high and low grounds. The soil is equally various, but in general has a mixture of clay susceptible of cul-

tivation, and pretty fertile. Of late a great part has been enclosed. The population, in 1791, was 421; the decrease 130 since 1755.

**SMALLHOLM**, a village in the above parish, four miles from Kelso, on the turnpike road to Edinburgh.

**SMALLHOLM TOWER**, or **SANDY KNOW**, an ancient square tower in the above parish, seated on a hilly ground, belonging to Mr. Scott of Harden, which forms a considerable land-mark for the Berwick ships at sea.

**SMALRIDGE** (George), D.D., bishop of Bristol, an eminent English prelate, born of a respectable family at Litchfield in 1666, and educated at Westminster; whence he was elected, in May 1682, to Christ Church, Oxford, where he graduated. In 1687 he published *Animadversions on a Piece upon Church Government*; and in 1689 a Latin poem, entitled *Auctio Davisiana Oxonii habita per Gul. Cooper et Ed. Millington Bibliopolas Londinenses*. In 1693 he was appointed prebendary of Litchfield; soon after lecturer of St. Dunstan's London, and minister of the new chapel, Tothill Fields; then canon of Christ Church, Oxford; next dean of Carlisle; and lastly, in 1713, bishop of Bristol: on the accession of George I. he was made lord almoner, but was removed for refusing to sign the declaration of the bishops against the rebellion in 1715. He died September 27th, 1719. He published twelve sermons, and many more were published after his death.

**SMALT**, n.s. Ital. *smalto*. A blue substance, produced from two parts of zaffre being fused with three parts common salt, and one part potash.

To make a light purple, mingle ceruse with logwood water; and moreover turnsoil with lac mingled with *smalt* of bice. *Peacham.*

**SMALT** is a kind of metallic glass of a dark blue color, which when levigated appears of a most beautiful color; and if it could be made sufficiently fine, would be an excellent succedanum for ultramarine, as not only resisting all kinds of weather, but even the most violent fires. See CHEMISTRY, Index.

**SMART**, n.s., v.n. & adj. { Sax. *rmeopta*; Swed. *smarta*; Dan. *smerte*. Quick; pungent pain; intellectual pain or suffering: to feel such pain: pungent; vigorous; active; brisk; acute; witty: the adverb and noun substantive follow these senses.

He that is surety for a stranger shall *smart* for it. *Proverbs.*

Then her mind, though too late, by the *smart*, was brought to think of the disease. *Sidney.*

Mishaps are mastered by advice discreet, And counsel mitigates the greatest *smart*. *Fuerie Queene.*

How *smart* a lash that speech doth give my conscience! *Shakspeare.*

That day was spent in *smart* skirmishes, in which many fell. *Clarendon.*

The art, order, and gravity of those proceedings, where short, severe, constant rules were set, and smartly pursued, made them less taken notice of. *Id.*

This sound proceeded from the nimble and *smart*

percussions of the ambient air, made by the swift and irregular motions of the particles of the liquors.

*Boyle.*

What interest such a *smartness* in striking the air hath in the production of sound, may in some measure appear by the motion of a bullet, and that of a switch or other wand, which produce no sound, if they do but slowly pass through the air; whereas, if the one do smartly strike the air, and the other be shot out of a gun, the celerity of their percussions on the air puts it into an undulating motion, which, reaching the ear, produces an audible noise. *Boyle.*

It was a *smart* reply that Augustus made to one that ministred this comfort of the fatality of things: this was so far from giving any ease to his mind, that it was the very thing that troubled him. *Tillotson.*

After showers

The stars shine *smarter*, and the moon adorns, As with unborrowed beams, her sharpened horns. *Dryden.*

When a man's wounds cease to *smart*, only because he has lost his feeling, they are nevertheless mortal. *South.*

You may see a *smart* rhetorician turning his hat in his hands during the whole course of his harangue. A deaf man would think he was cheapening a beaver. *Addison.*

It increased the *smart* of his present sufferings to compare them with his former happiness. *Atterbury.*

Human blood, when first let, is mild, and will not make the eye, or a fresh wound, *smart*. *Arbuthnot.*

To the fair he fain would quarter show, His tender heart recoils at every blow;

If unawares he gives too *smart* a stroke, He means but to correct, and not provoke. *Granville.*

No creature *smarts* so little as a fool, Let peals of laughter, Codrus! round thee break, Thou unconcerned canst hear the mighty crack. *Pope.*

I defy all the clubs to invent a new phrase, equal in wit, humour, *smartness*, or politeness, to my set. *Swift.*

Who, for the poor renown of being *smart*, Would leave a sting within a brother's heart? *Young.*

**SMART** (Christopher), M.A., a celebrated poet, born at Shipburn, in Kent, in 1722. He was educated at Pembroke Hall, Cambridge, where he was so distinguished for his Latin poetry that he gained the Seatonian prize for five years, four of which were in succession. In 1747 he took his degree, and, in 1753, went to London, where he became acquainted with the most eminent literary characters; but neglecting both his fortune and constitution he fell into indigence, which was succeeded by insanity; in which melancholy state he died in 1771. A complete edition of his poems was published in 1791, 2 vols. 12mo.

**SMATCII**, n.s. Corrupted from *smack*. Taste; tincture; twang.

Thou art a fellow of a good respect; Thy life hath had some *smatch* of honour in't. *Shakespeare.*

Some nations have a peculiar guttural or nasal *smatch* in their language. *Holder's Elements of Speech.*

These salts have somewhat of a nitrous taste, but mixt with a *smatch* of a vitriolick. *Grew.*

**SMATTER**, v.n. & n.s. { Supposed to be **SMAT'ERER**, n.s. } corrupted from

smack or taste. To have a slight taste; have a slight, superficial, and imperfect knowledge: talk superficially: the noun substantive following corresponding.

In proper terms, such as men *smatter*,  
When they throw out and miss the matter.

*Hudibras.*

All other sciences were extinguished during this empire, excepting only a *smatter* of judicial astrology.

*Temple.*

Since, by a little *smattering* in learning, and great conceit of himself, he has lost his religion, may he find it again by harder study and an humbler mind.

*Bentley.*

Of state affairs you cannot *smatter*,  
Are awkward when you try to flatter. *Swift.*

These few who preserve any rudiments of learning, are, except one or two *smatterers*, the clergy's friends.

*Id.*

Such a practice gives a slight *smattering* of several sciences, without any solid knowledge. *Watts.*

**SMEAR**, *v. a.* { Saxon *smearan*; Belgic

**SMEAR'Y**, *adj.* { *smceren*. To overspread with something viscous and adhesive; besmear: the adjective corresponding.

If any such be here, that love this painting,  
Wherein you see me *smear'd*.

If any think brave death outweighs bad life,  
Let him wave thus. *Shakspeare. Othello.*

Then from the mountain hewring timber tall,  
Began to build a vessel of huge bulk,

*Smear'd* round with pitch. *Milton.*

*Smear'd* as she was with black Gorgonean blood,  
The fury sprang above the Stygian flood. *Dryden.*

A *smear'y* foam works o'er my grinding jaws,  
And utmost anguish shakes my lab'ring frame. *Rowe.*

**SMEATON** (John), F.R.S., an eminent civil engineer, born on the 28th of May, 1724, O.S., at Austerhorpe, near Leeds, in a house built by his grandfather, and where his family have resided ever since. The strength of his understanding, and the originality of his genius, appeared at an early age: his playthings were not the playthings of children, but the tools of men; and he had greater entertainment in seeing the men work, and asking them questions, than in anything else. One day he was seen on the top of his father's barn, fixing up something like a windmill; another time he attended some men fixing a pump at a neighbouring village, and, observing them cut off a piece of bored pipe, he procured it, and actually made with it a working pump that raised water. These circumstances happened before he had attained his sixth year. About his fourteenth he had made an engine for turning, and made presents to his friends of boxes in ivory and wood very neatly turned. He forged his iron and steel, and melted his metals; he made tools of every sort for working in wood, ivory, and metals. He had made a lathe, by which he had cut a perpetual screw in brass, a thing little known at that day, which was the invention of Mr. Henry Hindley of York; with whom Mr. Smeaton soon became acquainted, and they spent many a night at Mr. Hindley's house on those subjects. Thus had Mr. Smeaton, by the strength of his genius and industry, acquired, at the age of eighteen, an extensive set of tools, and the art of working in most of the mechanical trades, without the as-

sistance of any master. Mr. Smeaton's father was an attorney, and intended to bring him up to the same profession. Mr. Smeaton therefore came up to London in 1742, and attended in Westminster Hall; but, finding that the law did not suit his genius, he wrote to his father, whose good sense from that moment left Mr. Smeaton to pursue the bent of his genius. In 1751 he began to try a machine of his invention to measure a ship's way at sea, and also made two voyages in company with Dr. Knight to try it, and a compass of his own invention, which was made magnetical by Dr. Knight's artificial magnets. In 1753 he was elected F. R. S.; his papers published in their Transactions show the universality of his genius. In 1759 he was honored with their gold medal for his Experimental Enquiry concerning the natural powers of Water and Wind to turn Mills and other Machines depending on a Circular Motion. This paper was the result of experiments made on working models in 1752 and 1753, but not communicated to the Society till 1759; before which time he had put these experiments into practice, so that he could assure the Society he had found them to answer. In December, 1755, the Eddystone lighthouse was burnt down. Mr. Weston, the chief proprietor, and the others, being desirous of rebuilding it in the most substantial manner, by advice of the earl of Macclesfield (then president of the Royal Society) employed Mr. Smeaton, who undertook the work, and completed it in the summer of 1759. Of this he gives an ample description in the volume published in 1791, and since republished under the revisal of his friend Mr. Aubert, F. R. S. On the 31st of December, 1764, he was appointed at a full board of Greenwich hospital, in a manner highly flattering to himself, one of the receivers of the Derwentwater estate. In this appointment he was very happy by the assistance and abilities of his partner Mr. Walton, who, taking upon himself the management and accounts, left Mr. Smeaton leisure to exert his abilities on public works, and to make improvements in the mills and in the estates of Greenwich hospital. By the year 1775 he had so much business as a civil engineer, that he wished to resign this appointment; but his friends, the late Mr. Stuart the surveyor, and Mr. Ibbotson their secretary, prevailed upon him to continue about two years longer. Mr. Smeaton now performed many works of general utility. He made the river Calder navigable; a work that required great skill and judgment, owing to the very impetuous floods in that river. He planned and attended the execution of the great canal in Scotland (see CANAL and FORTH); and, having brought it to the place originally intended, he declined a handsome yearly salary, that he might attend to the multiplicity of his other business. On the opening of the great arch at London Bridge, the excavation around and under the sterlings was so considerable that the bridge was thought to be in great danger of falling. He was then in Yorkshire, and was sent for by express. He immediately examined it, and the committee being called together, adopted his advice, which was, to repurchase the stones that had been taken

from the middle pier, then lying in Moorfields, and throw them into the river to guard the sterlings. The apprehensions concerning the falling of the bridge were great; his advice was pursued with alacrity; the stones were repurchased that day; horses, carts, and barges were got ready; and they began the work on Sunday morning. Thus Mr. Smeaton saved London Bridge from falling, and secured it till more effectual methods could be taken. The vast variety of mills which Mr. Smeaton constructed show the great use he made of his experiments in 1752 and 1753; for he never trusted to theory in any case where he could investigate it by experiment. He built a steam-engine at Austhorpe, and made experiments thereon, to ascertain the power of Newcomen's steam-engine, which he improved and brought to a far greater degree of perfection, both in its construction and powers, than it had before. Mr. Smeaton was a frequent attendant on parliament, his opinions being often called for; and, by the clearness of his description and the integrity of his heart, he seldom failed to obtain the act wished for. No one had ever more confidence placed in his testimony. In the courts of law he had several compliments paid him from the bench by lord Mansfield and others, for the light which he threw on difficult subjects. About 1785 Mr. Smeaton's health began to decline; and he then took the resolution to avoid all the business he could, that he might have leisure to publish an account of his inventions, which was certainly the first wish of his heart. But he got only his account of the Eddystone Lighthouse completed (see EDDYSTONE); and some preparations to his intended Treatise on Mills; for he could not resist the solicitations of his friends in various works; and Mr. Aubert, whom he greatly loved and respected, being chosen chairman of Ramsgate harbour, prevailed upon him to accept the place of engineer to that harbour; and to their joint efforts the public are chiefly indebted for the improvements that have been made there (see RAMSGATE), which appears in a report that Mr. Smeaton gave into the board of trustees in 1791, which they published. Mr. Smeaton being at Austhorpe walking in his garden, on the 16th of September, 1792, was struck with the palsy, and died the 18th of October, aged sixty-eight, greatly resigned to the Divine will. Mr. Smeaton had a warmth of temper and expression that appeared to those who did not know him well to border on harshness; but it arose from the intense application of his mind, which was always in the pursuit of truth, and investigating difficult subjects. In all the social duties of life he was exemplary; he was a most affectionate husband, a good father, a warm, zealous, and sincere friend, and an encourager of merit wherever he found it.

**SMELL,** *v. a. v. n., &* *Bolg. smoel,* warm.

**SMELLER,** *n. s.* [n. s.] Skinner, 'because smells are increased by heat.' But Mr. Thomson says, more probably, of Belg. *smeulen*, to smoke or reek, which in all the Gothic dialects signifies to smell. To perceive by the nose; by the odor; or (metaphorically) by mental sagacity: to strike the nostrils; have a particular scent or tincture;

practise smelling or a marked sagacity: the power or faculty of smelling; scent: a smeller is the person who smells, or an organ of smell.

Whosoever shall make like unto that, to smell thereto, shall be cut off. *Exod. xxx. 38.*

The king is but a man as I am: the violet smells to him as it doth to me; all his senses have but human conditions. *Shakspeare.*

Down with the nose, take the bridge quite away, Of him that, his particular to forefend, *Smells* from the general weal. *Id.*

The daintiest *smells* of flowers are out of those plants whose leaves *smell* not. *Bacon's Natural History.*

Honey in Spain *smell* apparently of the rosemary or orange, from whence the bee gathereth it. *Bacon.*

The sweetest *smell* in the air is the white double violet, which comes twice a-year. *Id.*

Next, in the nostrils she doth use the *smell*,

As God the breath of life in them did give:

So makes he now this power in them to dwell, To judge all airs whereby we breathe and live. *Davies.*

Now God, that was before annoyed with the ill-savour of sin, *smells* a sweet savour of rest. *Bp. Hall.*

A work of this nature is not to be performed upon one leg, and should *smell* of oil if duly handled. *Browne.*

Pleasant *smells* are not confined unto vegetables, but are found in divers animals. *Id. Vulgar Errors.*

A man so *smelling* of the people's lee, The court received him first for charity. *Dryden.*

The horse *smelt* him out, and presently a crochet came in his head how to countermine him. *L'Estrange.*

The ant lives upon her own, honestly gotten, whereas the fly is an intruder, and a common *smel-feast*, that sponges upon other people's trenches. *Id.*

There is a great variety of *smells*, though we have but a few names for them; the *smell* of a violet and of musk, both sweet, are as distinct as any two *smells*. *Locke.*

A cudgel he had felt, And far enough on this occasion *smelt*. *King.*

I had a mind to know whether they would find out the treasure, and whether *smelling* enabled them to know what is good for their nourishment. *Addison's Spectator.*

Their neighbours hear the same musick, or *smell* the same perfumes, with themselves; for here is enough. *Collier.*

If you have a silver saucepan, and the butter *smells* of smoak, lay the fault upon the coals. *Swift.*

**SMELL,** odour, with regard to the organ, is an impression made on the nose by little particles continually exhaling from odorous bodies. With regard to the object, it is the figure and disposition of odorous effluvia, which, sticking on the organ, excite the sense of smelling; and, with regard to the soul, it is the perception of the impression of the object on the organ, or the affection in the soul resulting therefrom. See ANATOMY, Index.

**SMELLIE** (William), an eminent surgeon and man-midwife, born in Scotland. He resided many years in London, where he had great practice, and was universally celebrated as a public lecturer. He was the first who treated of the form and size of the female pelvis, as adapted to the head of the fetus. He published a Com-

plete System of Midwifery, and a set of Anatomical Tables, with explanations. Being one of the first who wrote in English on the obstetrical art, he threw much light upon it, and paved the way for the numerous improvements that have since been made upon that most important branch of medical science by the Hamiltons and others, which before his time had been too much left to the random skill and practice of ignorant midwives. Dr. Smellie, in the course of his professional career, was engaged in a controversy with Dr. Burton of York, and with Dr. William Douglas physician extraordinary to the prince of Wales; but though some of the critical animadversions of those gentlemen were not destitute of foundation, they by no means detracted from the reputation of their antagonist. After a long and successful practice at London, he returned to Scotland, and died at Lanark (probably his birth-place), at a very advanced age, in 1763.

**SMELLIE** (William), F. R. S. E., a late eminent and learned Scottish printer. After he had commenced business, in Edinburgh, he was much patronised by the late learned lord Kames (see HOME), who not only introduced him to his literary friends in general, but recommended him to the university of Edinburgh as their printer. In 1780, when the earl of Buchan founded the Royal Society of Scottish Antiquaries, he associated Mr. Smellie as a member, and appointed him printer of its journals and transactions; and a few years afterwards, on the death of James Cummyng, esq., secretary to that society, Mr. Smellie was unanimously elected secretary, and keeper of its museum of natural history, antiquities, &c. Of his admission as a member of the Royal Society of Edinburgh, a society instituted nearly about the same time with the antiquarian, we neither know the date nor indeed the certainty of the fact, which we mention only upon the authority of Dr. John Watkins, who, in his Biographical and Historical Dictionary, styles him 'fellow' of it. Mr. Smellie published several learned works, particularly the Philosophy of Natural History, in one vol. 4to., and translated count Buffon's Natural History. As a member of society Mr. Smellie was a kind father, a warm-hearted friend, and a social companion. As to opinions in religion and philosophy, his sentiments were tingued with the scepticism of the age, as appears from his writings; and some of his philosophical opinions, particularly his theory respecting instinct and the passions, have been severely and justly censured by the reverend and learned Dr. Gleig. He died at Edinburgh, June 24th, 1795.

**SMELLING**, the act whereby we perceive smells, or whereby we become sensible of odorous bodies, by means of certain effluvia thereof, which, striking on the olfactory organ briskly enough to have their impulse propagated to the brain, excite a sensation in the soul. The principal organs of smelling are the nostrils and the olfactory nerves; the minute ramifications of which last are distributed throughout the whole concave of the former. See ANATOMY, Index. Smelling is performed by drawing into the nostrils the odorous effluvia floating in the air in inspiration, which strike with such force against

the fibrillæ of the olfactory nerves, which the figure of the nose and the situation of the little bones, render opposite thereto, as to shake them, and give them a vibratory motion; which action, being communicated hence to the common sensory, occasions an idea of a sweet, or fetid, or sour, or an aromatic, or a putrefied object, &c. The matter in animals, vegetables, fossils, &c, which chiefly affects the sense of smelling, Boerhaave observes, is that subtle substance, inherent in their oily parts, called spirits; because, when this is taken away from the most fragrant bodies, what remains has scarcely any smell at all; and this, poured on the most inodorous bodies, gives them a fragrancy. Willis observes that brutes have generally the sense of smelling in much greater perfection than man. By this alone they distinguish the qualities of bodies, which could not otherwise be known; hunt out their food at a great distance, as hounds and birds of prey; or hid among other substances, as ducks, &c. Man, having other means of judging of his food, &c., did not need so much sagacity in his nose; yet there are instances even in man. In the Histoire des Antilles, negroes are mentioned, who, by the smell alone, can distinguish between the footsteps of a Frenchman and a negro. The sense of smelling may be diminished or destroyed by diseases; as by the moisture, dryness, inflammation, or suppuration of the olfactory membrane, the compression of the nerves which supply it, or some fault in the brain itself at their origin. It may also be injured by immoderate use of snuff. When the nose abounds with moisture, such things as tend to take off irritation and coagulate the thin sharp serum may be applied; as the oil of anise mixed with fine flour, camphor dissolved in the oil of almonds, &c. For moistening the mucus, when it is too dry, some recommend snuff made of the leaves of marjoram, mixed with the oil of amber, marjoram, and aniseed; or a sternutatory of calcined white vitriol, twelve grains of which may be mixed with two ounces of marjoram water and filtrated. If there be an ulcer in the nose, it ought to be dressed with some emollient ointment, to which, if the pain be very great, a little laudanum may be added. If it be a venereal ulcer, twelve grains of corrosive sublimate may be dissolved in a pint and a half of brandy, a table spoonful of which may be taken twice a day. The ulcer ought likewise to be washed with it, and the fumes of cinnabar may be received up the nostrils. If there be reason to suspect that the nerves which supply the organs of smelling are inert, or want stimulating, volatile salts, or strong snuffs, and other things which occasion sneezing, may be applied to the nose; the forehead may likewise be anointed with balsam of Peru, to which may be added a little oil of amber.

'There escapes' says Magendie 'from almost every body in nature certain particles of an extreme tenuity, which are carried by the air often to a great distance. These particles constitute odors. There is one sense destined to perceive and appreciate them. Thus an important relation between animals and bodies is established. All bodies of which the atoms are fixed are called inodorous.'

## S M E L L I N G.

'The difference of bodies is very great relative to the manner in which odors are developed. Some permit them to escape only when they are heated; others only when rubbed. Some again produce very weak odors, whilst others produce only those which are highly powerful. Such is the extreme tenuity of odoriferous particles, that a body may produce them for a very long time without loosing weight in any sensible degree. Every odoriferous body has an odor peculiar to itself. As these bodies are very numerous, there have been attempts made to class them, which have nevertheless all failed.

'Odors, can be distinguished only into weak and strong, agreeable and disagreeable. We can recognise odors which are musky, aromatic, fetid, rancid, spermatic, pungent, muriatic, &c. Some are fugitive, others tenacious. In most cases an odor cannot be distinguished but by comparing it with some known body. There have been attributed to odors properties which are nourishing, medical, and even venomous; but, in the cases which have given rise to these opinions, might not the influence of odors have been confounded with the effects of absorption? A man who pounds jalap for some time will be purged in the same manner as if he had actually swallowed part of it. This ought not to be attributed to the effects of odors, but rather to the particles which, being spread around, float in the air, and are introduced either with the saliva or with the breath. We ought to attribute to the same cause the drunkenness of persons who are exposed for some time to the vapors of spirituous liquors. The air is the only vehicle of odors; it transports them to a distance; they are also produced, however, *in vacuo*, and there are bodies which project odoriferous particles with a certain force. This matter has not yet been carefully studied; it is not known if, in the propagation of odors, there be any thing analogous to the divergence, the convergence, to the reflection, or the refraction of the rays of light. Odors mix or combine with many liquids, as well as solids. This is the means employed to fix or preserve them. Liquids, gases, vapours, as well as many solid bodies reduced to powder, possess the property of acting on the organs of smell.

'*Apparatus for smelling.*—The olfactory apparatus ought to be represented as a sort of sieve, placed in the passage of the air, as it is introduced into the chest, and intended to stop every foreign body that may be mixed with the air, particularly the odors. This apparatus is extremely simple; it differs essentially from that of the sight and the hearing; since it presents no part anterior to the nerve, destined for the physical modification of the external impulse, the nerve is to a certain degree exposed. The apparatus is composed of the pituitary membrane, which covers the nasal cavities, of the membrane which covers the sinuses, and of the olfactory nerve

'The pituitary membrane covers the whole extent of the nostrils, increases the thickness of the spongy bones very much, is continued beyond their edges and their extremities, so that the air cannot traverse the nostrils but in a long narrow

direction. This membrane is thick, and adheres strongly to the bones and cartilages that it covers. Its surface presents an infinity of small projections, which have been considered by some as nervous papillæ, by others as mucous follicles, but which, according to all appearance, are vascular. These small projections give to the membrane an appearance of velvet. The pituitary is agreeable and soft to the touch, and it receives a great number of vessels and nerves. The passages through which the air proceeds to arrive at the fauces deserve attention. These are three in number. They are distinguished in anatomy by the names of inferior, middle, and superior meatus. The inferior is the broadest and the longest, the least oblique and least crooked; the middle one is the narrowest, almost as long, but of greater extent from top to bottom. The superior is much shorter, more oblique, and narrower. It is necessary to add to these the interval, which is very narrow, and which separates the partition of the external side of the nostrils in its whole extent. These canals are so narrow that the least swelling of the pituitary renders the passage of the air in the nostrils difficult, and sometimes impossible.

'The two superior meatus communicate with certain cavities, of dimensions more or less considerable, which are hollowed out of the bones of the head, and are called sinuses. These sinuses are the maxillary, the palatine, the sphenoidal, the frontal; and those which are hollowed out of the ethmoid bone, better known by the name of ethmoidal cells.

'The sinuses communicate only with the two superior meatus.

'The frontal, the maxillary sinus, the anterior cells of the ethmoid bone, open into the middle meatus; the sphenoidal, the palatine sinus, the posterior cells of the ethmoid, open into the superior meatus. The sinuses are covered by other soft membranes, very little adherent to the sides, and which appear to be of the mucous kind. It secretes more or less abundantly a matter called nasal mucus, which is continually spread over the pituitary, and seems very useful in smelling. A more considerable extent of the sinus appears to coincide with a greater perfection of the smell. This is at least one of the most positive results of comparative physiology.

'The olfactory nerve springs, by three distinct roots, from the posterior, inferior, and internal parts of the anterior lobe of the brain. Prismatic at first, it proceeds towards the perforated plate of the ethmoid bone. It swells all at once, and then divides itself into a great number of small threads, which spread themselves upon the pituitary membrane, principally on the superior part of it. It is important to remark that the filaments of the olfactory nerves have never been traced upon the inferior spongy bones, upon the internal surface of the middle meatus, nor in any of the sinuses. The pituitary membrane receives not only the nerves of the first pair, but also a great number of threads, which spring from the internal aspect of the spheno-palatine ganglion. These threads are distributed in the meatus, and in the inferior part of the membrane. It covers also, for a considerable length, the ethmoidal

tread of the nasal nerve, and receives from it a considerable number of filaments. The membrane which covers the sinus receives also a number of nervous ramifications.

The nasal fossæ communicate outwardly by means of the nostrils, the form and size of which are very variable. The nostrils are covered with hair on the inside, and are capable of being increased in size by muscular action. The nasal fossæ open into the pharynx by the posterior nostrils.

*Mechanism of smelling.*—Smell is exerted essentially at the moment when the air traverses the nasal fossæ in proceeding towards the lungs. We very rarely perceive any odor when the air proceeds from the lungs; it happens sometimes, however, particularly in organic diseases of the lungs.

The mechanism of smell is extremely simple. It is only necessary that the odoriferous particles should be stopped upon the pituitary membrane, particularly in the places where it receives the threads of the olfactory nerves. As it is exactly in the superior part of the nasal fossæ, where the extremes are so narrow that they are covered with mucus, it is also natural that the particles should stop there.

We may conceive the utility of mucus. Its physical properties are such that it appears to have a much greater affinity with the odoriferous particles than with air; it is also extremely important to the olfactory sense that the nasal mucus should always preserve the same physical properties. Whenever they are changed, as it is observed in different degrees of coryza, the smell is either not exerted at all, or in a very imperfect manner.

After what has been said of the distribution of the olfactory nerves, it is evident that the odors that reach the upper part of the nasal cavities will be perceived with greater facility and acuteness: for this reason, when we wish to feel more acutely, and with greater exactness, the odor of any body, we modify the air in such a manner that it may be directed towards this point. For the same reason, those who take snuff endeavour also to make it reach the upper part of the nasal fossæ. The internal face of the osa spongiosa appears well disposed to stop the odors at the instant the air passes. And, as there is an extreme sensibility in this point, we are inclined to believe that here the smell is exerted, though the filaments of the first pair have not been traced so far. Physiologists have not yet determined the use of the external nose in smelling; it appears intended to direct the air charged with odors towards the superior part of the nasal cavities.

Those persons who have their noses deformed, particularly if broken; those who have small nostrils, directed forward, have in general almost no smell. The loss of the nose, either by sickness or accident, causes almost entirely the loss of smell. Such people recover the benefit of this sense by the use of an artificial nose. The only use of the sinuses which is generally admitted is that of furnishing the greater part of the nasal mucus. The other uses which are attributed to them are, to serve as a dépôt to the

air charged with odoriferous particles, to augment the extent of the surface which is sensible to odors, and to receive a portion of the air that we inspire for the purpose of putting the power of smell in action, &c. These are far from being certain. Vapors and gases appear to act in the same manner upon the pituitary membrane as odors. The mechanism of it ought, however, to be a little different. Bodies reduced to a coarse powder have a very strong action on this membrane; even their first contact is painful; but habit changes the pain into pleasure, as is seen in the case of taking snuff. In medicine this property of the pituitary membrane is employed for the purpose of exciting a sharp instantaneous pain.

In the history of smell, the use of those hairs with which the nostrils and the nasal fossæ are provided, must not be forgotten. Perhaps they are intended to prevent the entrance of foreign bodies along with the air into the nasal fossæ. In this case, they would bear a strong analogy to the eye-lashes, and the hairs with which the ear is provided. It is generally agreed that the olfactory nerve is especially employed in transmitting to the brain the impressions produced by odoriferous bodies; but there is nothing to prove that the other nerves, which are placed upon the pituitary, as well as those near it, may not concur in the same function.—Magendie's Physiology.

**SMELT**, *n.s.* Sax. *rmetz*. A small sea fish. Of round fish there are brit, sprat, barn, *smelts*.

*Cure.*

**SMELT**, *v.a.* { Island. *smalta*; Belgic.

**SMELTER**, *n.s.* { *smelten*. To melt ore, so as to extract the metal: the noun substantive corresponding.

A sort of earth, *af* a dusky red colour, found chiefly in iron mines. Some of this earth contains as much iron as to render it worth *smelting*.

*Woodward.*

The *smelters* come up to the assayers.

*Jd. On Fossils.*

**SMERK**, *v. n.* Sax. *rmejan*. To smile wantonly.

Seest how bragg yon bullock bears,  
So *smirk*, so smooth, his pricked ears?  
His horns been as brade as rainbow bent,  
His dew-lap as lith as lass of Kent. *Spenser.*

Certain gentlemen of the gown, whose awkward, spruce, prim, sneering, and *smirking* countenance have got good preferment by force of cringing.

*Swift.*

To **SMIGHT**, for smite. Used only by Spenser.

As when a griffon, seized of his prey,  
A dragon fierce encounterth in his flight,  
Through widest air making his idle way;  
That would his rightful ravin rend away:  
With hideous horror both together *smight*,  
And souce so sore that they the heavens affray.

*Faerie Queene.*

**SMILAX**, rough bindweed, in botany, a genus of plants belonging to the class of dicœcia, and order of hexandria; and in the natural system ranking under the eleventh order, sarmentaceæ. The male calyx is hexaphylous, and there is no corolla; the female calyx is also hexaphylous

without any corolla; there are three styles, a trilocular berry and two seeds. There are fourteen species, viz.:—1. *S. aspera*; 2. *bona nox*; 3. *caduca*; 4. *Chinensis*; 5. *excelsa*; 6. *herbacea*; 7. *lanceolata*; 8. *laurifolia*; 9. *Pseudo-Chinensis*; 10. *rotundifolia*; 11. *sarsaparilla*; 12. *tannoides*; 13. *tetragona*; and 14. *Zeilanica*.

1. *S. Chinensis*, the China, or oriental china root, has roundish prickly stalks and red berries, and is a native of China and Japan.

2. *S. Pseudo-Chinensis*, the Pseudo-China, or occidental China root, has rounder smooth stalks and black berries, grows wild in Jamaica and Virginia, and bears the cold of our own climate. These roots have scarcely any smell or taste; when fresh they are said to be somewhat acrid, but as brought to us they discover, even when long chewed, only a slight unctuousness in the mouth. Boiled in water they impart a reddish color, and a kind of vapid softness; the decoction, when inspissated, yields an unctuous, farinaceous, almost insipid mass. They give a gold yellow tincture to rectified spirit, but make no sensible alteration in its taste. On drawing off the spirit from the filtered liquor there remains an orange-colored extract, nearly as insipid as that obtained by water, but scarcely in half its quantity. China root is said to promote perspiration and urine, and by its soft unctuous quality to blunt acrimonious humors. It was first introduced into Europe about 1535 as a specific against venereal disorders; the patient was kept warm, and a weak decoction of China root taken twice a day in bed to promote a sweat. But, whatever may be its effects in the warmer climates, it is in this of itself greatly insufficient. At present it is very rarely used, sarsaparilla being supposed more effectual. Prosper Alpinus says that this root is in great esteem among the Egyptian women for procuring plumpness.

3. *S. sarsaparilla* affords the sarsaparilla root, is the most valuable, and is well described in the London Medical Journal by the ingenious Dr. Wright of Edinburgh, who, during a long residence in Jamaica, made botany his peculiar study:—‘ This species,’ says he, ‘ has stems of the thickness of a man’s finger; they are jointed, triangular, and beset with crooked spines. The leaves are alternate, smooth and shining on the upper side; on the other side are three nerves or costæ, with sundry small crooked spines. The flower is yellow, mixed with red. The fruit is a black berry, containing several brown seeds. Sarsaparilla delights in low moist grounds and near the banks of rivers. The roots run superficially under the surface of the ground. The gatherers have only to loosen the soil a little, and to draw out the long fibres with a wooden hook. In this manner they proceed till the whole root is got out. It is then cleared of the mud, dried, and made into bundles. The sensible qualities of sarsaparilla are mucilaginous and farinaceous, with a slight degree of acrimony. The latter, however, is so slight as not to be perceived by many; and I am apt to believe that its medicinal powers may fairly be ascribed to its demulcent and farinaceous qualities. Since the publication of Sir William Fordice’s paper on sarsaparilla in the Medical Observations and Enquiries,

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vol. I., sarsaparilla has been in more general use than formerly. Sir William seems to think sarsaparilla a specific in all stages of lues; but from an attentive and careful observation of its effects, in some thousands of cases, I must declare that I could place no dependence on sarsaparilla alone. But, if mercury had been or was used with sarsaparilla, a cure was soon effected. Where the patients had been reduced by pain, disorder, and mercury, I prescribed a decoction of sarsaparilla and a table-spoonful of the powder of it twice a day, with the greatest success, in the most deplorable cases of lues, ill-cured yaws, and ill-disposed sores or cancers.’ See PHARMACY, Index.

SMILE, *v. n. & n.s.* { Belg. *smylen*. To

SMILINGLY, *adv.* { contract the face with pleasure; express kindness, love, or gladness, by the countenance; look gay, or joyous; express slight contempt: the action or look itself: the adverb corresponding.

Let their heirs enrich their time  
With smiling plenty and fair prosperous days.

Shakspeare.

I frown upon him, yet he loves me still.

—Oh that your frowns would teach my smiles such skill. Id. *Midsummer Night’s Dream*.

His flawed heart,

Twixt two extremes of passion, joy and grief,  
Burst smilingly. Id. *King Lear*.

Our king replied, which some will smile at now, but according to the learning of that time. *Camden*.

For see the morn,

Unconcerned with our unrest, begins

Her rosy progress smiling. Milton.

The river of bliss through midst of heaven  
Rolls o’er Elysian flowers her amber stream;  
With these, that never fade, the spirits elect  
Bind their resplendent locks inwreathed with beams;  
Now in loose garlands thick thrown off, the bright  
Pavement, that like a sea of jasper shone,  
Impurled with celestial roses smiled. Id.

Sweet intercourse

Of looks and smiles: for smiles from reason flow,  
To brute denied, and are of love the food. Id.

Carneades, stopping him smilingly, told him, we are not so forward to lose good company. Boyle.

The goddess of the mountain smiled upon her votaries, and cheered them in their passage to her palace. Tatler.

Yet what avail her unexhausted stores,  
Her blooming mountains, and her sunny shores,  
With all the gifts that heaven and earth impart,  
The smiles of nature, and the charms of art !

Adaison.

But, when her anxious lord returned,  
Raised is her head; her eyes are dried:  
She smiles as William ne’er had mourned,  
She looks as Mary ne’er had died. Prior.

The smiling infant in his hand shall take  
The crested basilisk and speckled snake. Pope.

The desert smiled,

And paradise was opened in the wild. Id.  
Should some more sober criticks come abroad,  
If wrong, I smile; if right, I kiss the rod. Id.

I kept him for his humour’s sake,

For he would oft beguile

My heart of thoughts that made it ache,

And force me to a smile. Coxeter.

SMILT, *v. n.* Corrupted from smelt or melt.  
Having too much water, many corns will smilt, or have their pulp turned into a substance like thick cream. Mortimer.

K

**SMINTHIEUS**, a surname of Apollo, given him in Phrygia, for delivering the country from an innumerable swarm of rats ; from *σμυρθαπ*, rats.

**SMIRCH**, v. a. From murk or murky. To cloud ; to dusk ; to soil.

I'll put myself in poor and mean attire,  
And with a kind of umber smirch my face.

Shakspeare.

Like the shaven Hercules in the smirch worm-eaten tapestry.

Id.

**SMIRK**, v. a. See SMERK. To look affectedly soft or kind.

Her grizzled locks assume a smirking grace,  
And art has levelled her deep furrowed face.

Young.

**SMITE**, v. a. & v. n. } Pret. smote ; part.

**SMITER** n. s. } pass. smit, smitten.

Sax. *rmitan* ; Belg. *smijten* ; Goth. *smida*. To strike ; reach with a blow ; wound ; slay ; strike ; collide : one who strikes.

And the flax and the barley was smitten, but the wheat and the rye not.

Exodus.

The servants of David had smitten of Benjamin's men, so that three hundred and threescore died.

2 Samuel ii. 31.

God smote him for his error, and he died.

2 Samuel vi. 7.

I gave my back to the smiters, and my cheeks to them that plucked off the hair.

Isaiah 1. 6.

The heart melteth, and the knees smite together.

Nahum.

So sweet a kiss the golden sun gives not  
To those fresh morning drops upon the rose,

As thy eye beams, when their fresh rays have  
smote

The night of dew that on my cheeks down flows.

Shakspeare.

The sword of Satan, with steep force to smite,  
Descending.

Milton.

I wander where the Muses haunt,  
Clear spring, or shady grove, or sunny hill,

Smit with the love of sacred song.

Id.

Tempt not the Lord thy God, he said, and stood ;  
But Satan smitten with amazement fell.

Id.

Death with a trident smote.

Id.

By the advantages of a good person, and a pleasing conversation, he made such an impression in her heart as could not be effaced : and he was himself no less smitten with Constantia.

Addison.

Let us not mistake God's goodness, nor imagine,  
because he smites us, that we are forsaken by him.

Wake.

Fired with the views this glittering scene displays,  
And smit with passion for my country's praise,  
My artless reed attempts this lofty theme,  
Where sacred Isis rolls her ancient stream.

Tickel.

See what the charus that smite the simple heart,  
Not touched by nature, and not reached by art.

Pope.

Smit with the love of sister arts we came,  
And met congenial, mingling flame with flame.

Id.

**SMITH**, n. s. } Sax. *rmið*, of *rmitan*, to  
SMITH' CRAFT, } beat ; Belg. Dan. Swed. Germ.

SMITH' ERY, } and Goth. *smid*. One who

SMITH' Y. } forges metal ; hence he who makes or effects any thing ; often used in composition : smithery and smithy are both names of the smith's shop : and, says a very old English couplet,—

Whence comes SMITH, albe he knight or squire,  
But from the smith that smiteth at the fire?

He doth nothing but talk of his horse, and can

shoe him. I am afraid his mother played false with a smith.

Shakspeare.

Inventors of pastorage, smithcraft, and musick.

Raleigh.

The doves repented, though too late,  
Become the smiths of their own foolish fate.

Dryden.

His blazing locks sent forth a crackling sound,  
And hissed like red hot iron within the smithy drowned.

Id.

The ordinary qualities observable in iron, or a diamond, that make their true complex idea, a smith or a jeweller commonly knows better than a philosopher.

Locke.

Lawless man the anvil dares profane,  
And forge that steel by which a man is slain ;  
Which earth at first for ploughshares did afford,  
Nor yet the smith had learned to form a sword.

Tate.

**SMITH** (Adam), LL. D., the celebrated author of the Enquiry into the Nature and Causes of the Wealth of Nations, was the only son of Adam Smith, comptroller of the customs at Kirkaldy, and of Margaret Douglas, daughter of Mr. Douglas of Strathenry. He was born at Kirkaldy on the 5th June 1723, soon after the death of his father. His constitution during his infancy was sickly, and required all the care of his surviving parent. When only three years old he was carried by his mother to Strathenry on a visit to his uncle Mr. Douglas ; and, happening one day to be amusing himself alone at the door of the house, he was stolen by a party of those vagrants who in Scotland are called tinkers, or gypsies. Luckily he was missed immediately, and the vagrants pursued and overtaken in Leslie wood ; and thus Dr. Smith was preserved to reform the commercial policy of Europe. He received the rudiments of his education in the school of Kirkaldy under David Miller, a teacher of eminence, whose name deserves to be recorded on account of the great number of eminent men which that seminary produced under his direction. Dr. Smith, even while at school, attracted notice by his attachment to books, and by his extraordinary memory ; while his friendly and generous disposition secured the affection of his school-fellows. He was sent in 1737 to the university of Glasgow, where he remained till 1740, when he went to BAliol College, Oxford, on Snell's foundation. His favorite pursuits at the university were mathematics and natural philosophy. After his removal to England he employed himself in translating, particularly from the French, to improve his style. He also studied the languages, of which, both ancient and modern, his knowledge was extensive. After seven years residence at Oxford, he returned to Kirkaldy, and lived two years with his mother. He had been designed for the church of England ; but, disliking the ecclesiastical profession, he resolved to limit his ambition to some of those preferments to which literary attainments lead in Scotland. In 1748 he fixed his residence in Edinburgh, and for three years read a course of lectures on rhetoric and belles lettres under the patronage of Lord Kames. In 1751 he was elected professor of logic in the university of Glasgow, and in 1752 was removed to the professorship of moral philosophy. In this situation he remained thirteen years, a period

he considered as the most useful part of his life. His lectures on moral philosophy were divided into four parts: the first contained natural theology; in which he considered the proofs of the being and attributes of God, and those truths on which religion is founded; the second comprehended ethics, strictly so called, and consisted chiefly of those doctrines which he afterwards published in his Theory of Moral Sentiments; in the third part he treated more at length of justice; and in the last part he examined those political regulations which are founded upon expediency, and are calculated to increase the riches, power, and prosperity of a state. In delivering his lectures he trusted almost entirely to extemporary elocution; his manner was plain and unaffected, and he never failed to interest his hearers. His reputation soon rose very high, and many students resorted to the university merely upon his account. When his acquaintance with Mr. Hume first commenced is uncertain; but it had ripened into friendship before 1752. In 1759 he published his Theory of Moral Sentiments; a work which deservedly extended his reputation; for, though several of its conclusions are ill-founded, it must be allowed to be a singular effort of invention, ingenuity, and subtlety. It abounds every where with the purest and most elevated maxims on the practical conduct of life; and, when the subject leads him to address the imagination, the variety and felicity of his illustrations, the richness and fluency of his eloquence, and the skill with which he wins the attention and commands the passions of his readers, leave him among our British moralists without a rival. Towards the end of 1763 Dr. Smith received an invitation from Mr. Charles Townsend to accompany the duke of Buccleugh on his travels; and the liberal terms on which this proposal was made induced him to resign his office at Glasgow, when he generously returned to his pupils the fees he had received from them. He joined the duke of Buccleugh at London early in 1764, and set out with him for the continent in March. After a stay of ten days at Paris they proceeded to Thoulouse, where they fixed their residence for eighteen months; whence they went by a pretty extensive route through the south of France to Geneva, where they passed two months. About Christmas 1765 they returned to Paris, and remained there till October 1766. The society in which Dr. Smith passed these ten months, by the recommendation of Mr. Hume, were chiefly Turgot, Quesnai, Necker, D'Alembert, Helvetius, Marmontel, and Madame Riccoboni; and some of them he continued ever after to reckon among his friends. In October 1766 the duke of Buccleugh and the doctor returned to England. Dr. Smith spent the next ten years of his life with his mother at Kirkaldy, occupied habitually in intense study, but unbending his mind at times in the company of some of his old school-fellows who still resided near the place of their birth. In 1776 he published his Enquiry into the Nature and Causes of the Wealth of Nations; a book universally known, and esteemed the most perfect work which has yet appeared on the general principles of legislation. He spent the next two years in London, where he enjoyed the society of some of the most

eminent men of the age; but he removed to Edinburgh in 1778, in consequence of having been appointed, at the request of the duke of Buccleugh, one of the commissioners of the customs in Scotland. Here he spent the last twelve years of his life in an affluence which was more than equal to all his wants. But his studies seemed entirely suspended till the infirmities of old age reminded him that it was now too late. The principal materials of the works which he had announced had long been collected, and little probably was wanting but a few years of health and retirement to complete them. The death of his mother, who had accompanied him to Edinburgh in 1784, together with that of his cousin Miss Douglas in 1788, contributed to frustrate these projects. They had been the objects of his affection for more than sixty years, and in their society he had enjoyed from his infancy all that he ever knew of the endearments of a family. He was now alone and helpless; and though he bore his loss with equanimity, and regained apparently his former cheerfulness, yet his health and strength gradually declined till July 1790, when he died. He left a few essays, which have since been published, but burnt all the rest of his MSS. before he died.

**SMITH** (Sir James Edward), may justly be considered as one of the most distinguished English botanists since the time of Sloane. He was born in the city of Norwich, December 2d, 1759, and was educated at the University of Edinburgh. Sir James continued in the undivided pursuit of botany till the day of his death, which occurred March 15th, 1828. His works are exceedingly voluminous, and, besides those which bear his name, he contributed largely to the Encyclopædia edited by Dr. Rees.

**SMITH** (Edmund), a distinguished English poet, the only son of Mr. Neale, an eminent merchant, by a daughter of baron Lechmere, was born in 1668. By his father's death he was left young to the care of Mr. Smith, who had married his father's sister, and who treated him with so much tenderness that at his death he took his name. His writings are scattered in miscellanies and collections: his celebrated tragedy of *Phædra* and *Hippolitus* was acted in 1707; and, being introduced at a time when the Italian opera so much engrossed the polite world, gave Mr. Addison, who wrote the prologue, an opportunity to rally the vitiated taste of the public. However, it is perhaps rather a fine poem than a good play. This tragedy, with a poem to the memory of Mr. John Philips, three or four odes, with a Latin oration spoken at Oxford in laudem Thomæ Bodleii, were published as his works by his friend Mr. Oldisworth. Mr. Smith died in 1710, sunk into indolence and intemperance by poverty and disappointments; the hard fate of many a man of genius.

**SMITH** (Hugh), M.D., a celebrated English physician, son of Mr. Smith, an eminent surgeon at Hemel-Hempstead. After serving an apprenticeship with his father, he went to Edinburgh, attended the university there, and graduated with much reputation. He then went to London, where, in 1759, he published *An Essay on the Blood, with Reflections on Venesection*. In

1760 he began a course of lectures on the theory and practice of physic, which were attended by great numbers of physicians, surgeons, apothecaries, and students of medicine. Within three years his lectures acquired him such fame that the pupils of St. George's hospital, &c., invited him to deliver his lectures at the west end of the city; which he did, and was numerously attended for many years. He also published his text book, which met with a very extensive sale. About 1765 Dr. Smith was unanimously chosen physician to the Middlesex Hospital, in which office he continued several years, highly esteemed by his colleagues. In 1770 he was elected alderman of Tower Ward, London; but his numerous professional engagements obliged him to resign that honorable office two years after. In 1780 he purchased an elegant house at Streatham, where he hoped to enjoy retirement; but this was a vain hope for a man of his abilities among the nobility and gentry of Surry. At length the death of his son, affecting his spirits, made him retire to Stratford, where he died, 26th December 1790.

SMITH (John), M. A., a learned English divine, born at Abchurch, in Northamptonshire, and educated at Cambridge, where he graduated in 1640. He published his Select Discourses, in 4to., in 1660, and died in 1672, aged fifty-four.

SMITH (John), D. D., an eminent English divine, born at Lowther, in Westmoreland, in 1659, where his father was rector, and gave him the rudiments of his education. His father must have been a man of liberal sentiments; for he put young John first under the tuition of Christopher Nessie, a Presbyterian dissenter, and next under that of Thomas Lawson, a Quaker, who was an excellent teacher of the dead languages. In 1674 he was admitted of St. John's College, Cambridge; and in 1686 attended lord Lansdown as chaplain in his embassy to Spain. On his return, about 1692, he became chaplain to bishop Crew of Durham; who, in 1695, made him rector of Gateshead, and a prebendary of Durham. In 1696 he graduated D. D. He was next made rector of Bishop's Wearmouth. He was deeply versed in northern literature and antiquities; and the admirers of the venerable Bede are indebted to him for an elegant edition of that ancient historian whose works he was engaged in preparing for the press when he died at Cambridge, in 1715: but the work was finished, according to his directions, by his son George Smith, esq., of the Inner Temple, in 1722, to whom he left a large fortune, which he had obtained by his wife: four of the doctor's Sermons were also published.

SMITH (John), an excellent mezzotinto engraver, who flourished about 1700. He united softness with strength, and finished with freedom. He served with one Tillet, a painter in Moor-fields; and learned from Becket the secret of mezzotinto; and, being farther instructed by Van der Vaart, was taken to work in Sir Godfrey Kneller's house. 'To posterity, perhaps, his prints,' says Mr. Walpole, 'will carry an idea of something burlesque; perukes of an enormous length, flowing over suits of armor, compose wonderful habits. Smith exhibited both, as he found them in the portraits of Kneller. In the

Kit-cat club he has poured full bottoms chiefly over night-gowns. Smith composed two large volumes, with proofs of his own plates, for which he asked £50. His finest works are duke Schomberg on horseback; that duke's son Maynhard; the earls of Pembroke, Dorset, and Albemarle; three plates of children; William Cowper; Gibbons and his wife; queen Anne; the duke of Gloucester, a whole length; queen Mary, in a high head, fan, and gloves; the earl of Godolphin; the duchess of Ormond, a whole length, with a black; Sir George Rooke, &c. There is a print by him of James II. with an anchor, but no inscription; which, not being finished when the king went away, is so scarce that it is sometimes sold for above a guinea. Smith also performed many historic pieces; as the loves of the gods, from Titian, at Blenheim, in ten plates; the holy family with angels, after C. Maratti, &c.'

SMITH (Sir Thomas) was born at Walden, in Essex, in 1512. At fourteen he was sent to Queen's College, Cambridge, where he distinguished himself so much that he was made Henry VIII.'s scholar together with John Cheke. He was chosen a fellow of his college in 1531; and, in 1533, appointed to read the public Greek lecture. The common mode of reading Greek at that time was very faulty; the same sound being given to the letters and diphthongs *i*, *η*, *υ*, *α*, *ο*, *υ*. He and Cheke were sensible that this pronunciation was wrong: and, after a good deal of consultation, they agreed to introduce that mode of reading which prevails at present. Mr. Smith was lecturing on Aristotle de Republica in Greek. At first he dropped a word or two at intervals in the new pronunciation. No notice was taken of this for some days; but, as he continued, his audience began to wonder at the unusual sounds, and, at last some of his friends spoke of them to him. He discovered his project, and great numbers soon resorted to him for information. The new pronunciation was adopted with enthusiasm, and soon became universal at Cambridge. It was opposed by bishop Gardiner the chancellor; but its superiority was so evident that in a few years it spread over all England. In 1539 he travelled and studied in France and Italy. On his return he was made regius professor of civil law at Cambridge. About this time he published a treatise on the mode of pronouncing English. He also promoted the Reformation. Having gone into the family of the duke of Somerset, the protector during the minority of Edward VI., he was employed in public affairs; and, in 1548, was made secretary of state, and knighted. He was then sent ambassador to Brussels and France. Upon Mary's accession he lost all his places; but, having preserved the friendship of Gardiner and Bonner, he was not only exempted from persecution, but allowed a pension of £100. During Elizabeth's reign he was employed in public affairs, and was sent thrice as her ambassador to France. He died at Mounthall, in Essex, in 1577. His abilities were excellent, and his attainments uncommonly great. He was a philosopher, physician, chemist, mathematician, linguist, historian, and architect. He wrote, 1. The English Commonwealth. 2. A letter *De Recta et Emendata Linguae Graecae*

**Pronunciation.** 3. De Moribus Turcarum. 4. De Druidum Moribus.

SMITH (Thomas), D.D., an eminently learned English divine, born in London in 1638, and admitted of Queen's College, Oxford, in 1657. In 1663 he was made master of a free-school near Magdalen College; and, in 1668, was elected a fellow, being now famed for his skill in the oriental languages. In June 1668 he went as chaplain to Sir Daniel Harvey, ambassador to Constantinople, and returned thence in 1671. In 1676 he travelled into France; and, on his return, became chaplain to Sir Joseph Williamson, secretary of state. In 1679 it was proposed that he should collate and translate the Alexandrian Manuscript of the Bible (see *SEPTUAGINT*), and Charles II. promised him a benefice for it; but this excellent design was never executed. His reputation was high among the learned. In 1683 he graduated. In 1687 he was made prebendary of Heyghbury, Wilts. In August 1688 he was deprived of his fellowship by Dr. Giffard, the popish president, but restored in October; yet afterwards he lost it, upon refusing to take the oaths to William and Mary. He died at London, May 11th, 1710. He published four letters in Latin, which he translated afterwards, entitled, 1. Remarks on the Manners, Religion, and Government of the Turks, 8vo., 1678. 2. An Account of the Greek Church, English and Latin, 8vo., 1680. 3. A Life of Camden, Latin, 4to., 1691. 4. Vite quorundam Eruditissimorum et illustrium Virorum, 4to., 1707; with many other learned tracts.

SMITH (William), D. D., son of the Rev. Richard Smith, minister of St. Andrew's Worcester, a learned English divine, born in Worcester, May 30th, 1711, where he was educated. He was matriculated at New College, Oxford, in 1728, where he became A. B. in 1732, and A. M. in 1737. After this he was patronised by James, earl of Derby, with whom he spent some years, and who, in 1735, appointed him rector of Trinity Church, Chester. He published a translation of Longinus on the Sublime, with notes, and a life of the author; by which he acquired great reputation. On June 8th, 1753, he was appointed a minister of St. George's church, Liverpool. This year he published a translation of Thucydides's History of the Peloponnesian War; 2 vols. 4to., dedicated to the prince of Wales. On the 28th July, 1758, king George II. appointed him dean of Chester; and on the 30th April, 1766, he was elected rector of Handley. In 1782 he published Nine Discourses on the Beatitudes. He died 12th January 1787.

SMITH (William, George, and John), of Chichester, three eminent English painters, brothers. William was born in 1707; painted portraits and landscapes well, and especially fruits and flowers. He died in 1764, aged fifty-seven. George was born in 1714, proved the most eminent of the three, and excelled in landscape painting. He died in 1776, aged sixty-two. John was born in 1717, and was thought by some superior to George in landscape painting. He died in 1764, aged forty-seven.

SMITH (Thomas), another landscape painter, who, to distinguish him from the preceding, is

usually called Smith of Derby, of which town he was a native. He was wholly self-taught, and yet attained distinction in the line which he followed. Several prints have been engraved by Vivares from his pictures. He died in 1769, leaving a son, John Raphael Smith, who became an eminent engraver in mezzotinto, and died in 1811.

SMITH (John Raphael), was the son of Thomas Smith, the landscape painter of Derby, from whom he received instruction in drawing; but, losing him at an early age, he had no other teacher. He practised portrait painting in crayons, and rose to pre-eminence in that line, as appeared in his whole lengths of Charles Fox and earl Stanhope. He also became distinguished as a mezzotinto engraver, and scraped a great number of fine prints from the works of Sir Joshua Reynolds. Among his scholars were the two Wards, Hilton, and De Wint. Mr. Smith was the first who brought into public notice that eccentric genius, George Morland. He died in 1812.

SMITH (William), a traveller, born about the end of the seventeenth century, was sent in 1726 by a commercial company to Guinea, to make plans and views of the forts, and to survey the country from the mouth of the river Gambia to Juidah. He returned to England in September, 1727, after having visited Barbadoes; and he subsequently published the result of his labors, under the title of A New Voyage to Guinea, containing an exact Description of the country and of the Manners and Customs of the inhabitants, London, 1744, 8vo., which work was translated into French; and Draughts of Forts on the coast of Guinea, 4to.—Another WILLIAM SMITH was the author of The History of the Province of New York, North America, to the year 1732, London 1757, 4to.; reprinted 1765, 8vo., and published in French, Paris, 1767, 12mo.

SMITH (William), an eminent performer, born about 1730 in the city of London, where his father carried on business as a wholesale grocer and tea-dealer. He was educated at Eton and St. John's College, Cambridge, with a view to the clerical profession; but, having subjected himself to the danger of censure by some youthful irregularities, he left the university, and, returning to London, directed his attention to the stage. In January 1753 he made his first appearance at Covent Garden, in the character of Theodosius, in the tragedy of The Force of Love. He was successful; and continued to fill some of the principal parts in a variety of plays for twenty-two years. In 1774 he removed to Drury Lane, and continued to belong to the company there till 1783, when he retired in consequence of having married a lady of fortune, the widow of Kelland Courtenay, esq., and daughter of viscount Hinchingbrooke. He then devoted his time to the cultivation of polite literature and the enjoyment of rural pleasures, especially fox-hunting. His death took place September 13th, 1819, at Bury St. Edmunds, in Suffolk, where he had long resided.

SMITH (Mrs. Charlotte) was the eldest daughter of Nicholas Turner, esq., a gentleman of fortune, who inherited considerable estates in the counties

of Surry and Sussex, and was born in 1749. Mr. Turner early discovered such indications of genius in her infant mind that he determined no expense should be spared in the cultivation of those talents which she seemed to have inherited from both parents; and therefore bestowed on her what was thought the best education. She was placed in one of the most distinguished seminaries in the neighbourhood of London; and, on quitting school, was attended by various masters; and, if expense constituted a good education, she may be said to have received the best that could have been given: but Mrs. Smith frequently regretted that in the conduct of it so little judgment was shown, and that the time lost in the attainment of superficial accomplishments was not employed in more useful studies. After having been accustomed to the most boundless indulgence from her own family, she was suddenly involved in household cares, transplanted into a soil totally ungenial to her habits and repugnant to her taste, and became subject to the will of a man who, far from possessing the power of regulating the conduct of a wife scarcely emerged from childhood, knew not how to govern himself. From this fatal marriage, which had been brought about by the officiousness of friends, and which was by no means the effect of attachment on either side, all the future misfortunes of this ingenuous lady originated. It was in consequence of her husband's embarrassments, that Mrs. Smith thought of collecting such poems as she had originally written for her amusement; they were first offered to Dodsley and refused; they were afterwards shown to Dilly in the Poultry, who also declined having any thing to do with them. It has been seen with what degree of judgment these decisions were made; through the interest of Mr. Hayley they were at length printed by Dodsley on Mrs. Smith's account, and the rapid sale, and almost immediate demand for a second edition, sufficiently justified the author's confidence in her own powers, and encouraged her to proceed in a line, which, as it might render her in a great degree independent of the persons who had now the management of her family's affairs, contributed to divert her thoughts, and to render the sad realities she was suffering in some measure less poignant. The still increasing derangement of Mr. Smith's affairs soon after obliged him to leave England, and, in the autumn of 1784, he established his family in a gloomy and inconvenient house in Normandy, nine miles from any town. His wife's sufferings in this comfortless situation, where she gave birth to her youngest child, were such that few women could have borne with fortitude; but her admirable mind and persevering spirit still supported her; and again literary pursuits served to lighten her cares during the very severe winter which happened that year; and, when her health would not admit of her going out, she translated into English the novel of *Manon l'Escout*, by the abbé Prevost. It was afterwards published and censured as being immoral; but the fact was, it fell accidentally in her way when she had not much opportunity of selection, and at a time when she eagerly sought for any resource to mitigate her anxieties. In the spring of 1785 the family

returned to England. Domestic calamities again overtook her soon afterwards; and circumstances, which delicacy forbids us to detail, determined her to quit her husband's house, and withdraw with most of her children to a small cottage near Chichester. The charming novel of *Emmeline* was written at this place in the course of a few months; the novelty of the descriptive scenery which Mrs. Smith first introduced, and the elegance of the style, obtained for it the most unbounded success, and increased the ardor and persevering application of the author, which brought forward several other works of the same kind, almost all equally pleasing, and which followed with a rapidity and variety truly astonishing. In 1803 Mrs. Smith again changed her habitation, and removed from the neighbourhood of Tunbridge Wells to a village in Surry, regarding it as her native soil, having passed her infancy at her father's place at Stoke, and there she had long expressed a desire that all her sorrows might repose. Death closed her long sufferings in her fifty-seventh year, on the 28th of October 1806, after a most tedious and painful illness, which had totally exhausted her frame; but the powers of her extraordinary mind lost neither their strength nor their brilliancy. Mrs. Smith's poetical works are well known, and the number of editions through which they passed sufficiently establishes the public opinion of their merit. Those which have been published since her decease offer great proof of the energy of her genius; for they were all written while she was undergoing much bodily suffering, and while her mind was harassed with many cares.

SMITH (Elizabeth), a young lady of very uncommon talents and acquirements, was born in the county of Durham in the year 1776, and died in the summer of 1806, at the age of thirty. Miss Bowdler, the author of *Sermons on the Doctrines and Duties of Christianity*, published, in 1809, *Fragments in Prose and Verse*, by this young lady, with some account of her life and character. At a very early age Miss Smith discovered that love of reading, and that close application to whatever she engaged in, which marked her character through life. She acquired a wonderful knowledge of languages both ancient and modern, while she displayed an acuteness and accuracy of thinking, combined with the most unassuming modesty, which have probably never been surpassed. Besides the fragments above mentioned, we have from her pen an excellent Translation of Letters and Memoirs, relating to Mr. and Mrs. Klopstock, from the original German; and a Translation of the Book of Job, from the original Hebrew; which while it remained in MS. was considered by more than one eminent divine a work too valuable to be withheld from the lovers of Biblical literature. In the volume of Fragments we find several pieces of poetry, original and translated, of great beauty; some metaphysical and moral discussions of great acuteness and accuracy; with a display of religious principle, and proofs of religious practice, equally salutary and unaffected. Her life and death were equally Christian, the recollection of which added sanctity, while it furnished consolation to the sorrow of her surviving friends and family.

**SMITHERY** signifies also the art of a smith, by which iron is wrought into any shape by means of fire, hammering, filing, &c.

**SMITHIA**, in botany, a genus of the decandria order, and diadelphia class of plants; natural order thirty-second, papilionaceæ : CAL. monophylous and bilabiated : COR. winged ; the legumen enclosed in the calyx with three or four joints, and containing as many seeds, which are smooth, compressed, and kidney-shaped. There is only one species, viz.—S. thonina.

**SMITING LINE**, in a ship, is a small rope fastened to the mizen-yard-arm, below at the deck, and is always furled up with the mizen-sail, even to the upper end of the yard, and thence it comes down to the poop. Its use is to loose the mizen-sail without striking down the yard, which is easily done, because the mizen-sail is furled up only with rope-yarns ; and therefore when this rope is pulled hard it breaks all the rope-yarns, and so the sail falls down of itself. The sailor's phrase is, smite the mizen (whence this rope takes its name), that is, hale by this rope that the sail may fall down.

**SMITS** (Lodowick), a Dutch painter, born at Dordt in 1635. He painted historical subjects and fruit pieces, for which he got high prices ; yet from some defect in his coloring their beauty soon decayed. He died in 1675, aged forty.

**SMITS** (Diederic), a poet of Holland, a native of Rotterdam. He united with a poetical genius a taste for music, and M. de Vries, in his History of Dutch poetry, prefers the heroic poem of Smits, On the delivery of the Children of Israel from the Idolatrous Worship of Baal-peor, to Abraham the Patriarch of Nicholas Hoogvliet. Smits wrote a poem on the river Rotte, which gives name to the city of Rotterdam ; and he translated Pope's Epistle from Heloise to Abelard and other pieces.

**SMITZ** (Gaspar), who, from painting a great number of Magdalens, was called Magdalen Smith, was a Dutch painter, who came to England soon after the restoration. For these portraits sat a woman whom he kept and called his wife. A lady whom he had taught to draw took him with her to Ireland, where he painted small portraits in oil, had great business, and high prices. His flowers and fruits were so much admired that one bunch of grapes sold there for £40. In his Magdalens he generally introduced a thistle on the fore ground. He had several scholars, particularly Maubert, and one Gawdy of Exeter. Yet, notwithstanding his success, he died poor in Ireland in 1707.

**SMOCK**, n. s.

**SMOCK-FACED**, adj. { garment of a woman ; a shift : used in contempt for any thing feminine ; as in smock-faced for pale ; maidenly ; smock-treason, &c.

Their apparel was linen breeches, and over that a smock close girt unto them with a towel. *Sandys.*

Her body covered with a light taffeta garment, so cut, as the wrought smock came through it in many places. *Sidney.*

How dost thou look now ? oh ill-starred wench, Pale as thy smock ! when we shall meet at compt, This look of thine will hurl my soul from heaven. *Shakspeare.*

At *smock-treason*, matron, I believe you, And if I were your husband ; but, when I Trust to your cobweb bosoms any other, Let me there die a fly, and feast yon spider.

*Ben Jonson.*

Plague on his *smock-loyalty* ! I hate to see a brave bold fellow sotted, Made sour and senseless, turned to whey by love. *Dryden.*

Old chiefs, reflecting on their former deeds, Disdain to rust with battered invalids ; But active in the foremost ranks appear, And leave young *smock-faced* beaux to guard the rear. *Fenton.*

Though Artemisia talks by fits Of councils, classics, fathers, wits ; Reads Malbranche, Boyle, and Locke. Yet in some things, methinks, she fails ; 'Twere well if she would pare her nails, And wear a cleaner smock. *Swift.*

**SMOKE**, n. s., v. n. & v. a. { Saxon *fmoeç* ; *smoke*, v. a. } Belg. *smoek*. The **SMOKE-LESS**, adj. { sooty exhalation of **SMOKY**. } things burning : to emit such exhalation ; burn ; be kindled ; raise a dust like smoke ; hunt out ; to scent by smoke ; dry in smoke ; smell or find out ; ridicule : to smoke-dry is to dry by smoke : the two adjectives corresponding.

When the sun went down, a *smoking* furnace and a burning lamp passed between those pieces. *Gen. xv. 17.*

The anger of the Lord shall *smoke* against that man. *Deut.*

She might utter out some *smoke* of those flames wherewith else she was not only burned, but smothered. *Sidney.*

His brandished steel, Which *smoked* with bloody execution. *Shakespeare.*

Maugre all the world will I keep safe, Or some of you shall *smoke* for it in Rome. *Id.*

He was first *smoked* by the old lord ; when his disguise and he is parted, what a sprat you shall find him ! *Id.*

O he 's as tedious As a tired horse, or as a railing wife ; Worse than a *smoky* house. *Id.*

London appears in a morning drowned in a black cloud, and all the day after smothered with *smoky* fog, the consequence whereof proves very offensive to the lungs. *Harvey.*

Stand off, and let me take the air ; Why should the *smoke* pursue the fair ? *Cleaveland.*

Morpheus, the humble god that dwells In cottages and *smoky* cells,

Flies gilded roofs and beds of down ; And, though he fears no prince's frown, Flies from the circle of a crown. *Denham.*

All involved with stench and *smoke*. *Milton.* To him no temple stood nor altar *smoked*. *Id.*

Courtesy Is sooner found in lowly sheds, With *smoky* rafters, than in tapestry halls

And courts of princes. *Id.*

He hither came t' observe and *smoke* What courses other riskers took. *Hudibras.*

Aventinus drives his chariot round ; Proud of his steeds he *smokes* along the field ; His father's hydra fills the ample shield. *Dryden's Aeneid.*

Victorious to the top aspires, Involving all the wood in *smoky* fires. *Dryden.*

*Smoke-dry* the fruit, but not if you plant them. *Mortimer.*

*I began to smoke that they were a parcel of mumpers, and wondered that none of the Middlesex justices took care to lay some of them by the heels.*

*Addison's Freeholder.*

*If blast septentrional with brushing wings Sweep up the smoky mists, and vapours damp, Then woe to mortals!* Philip.

*As smoke that rises from the kindling fires Is seen this moment, and the next expires. Prior.*

*Smoke passing through flame cannot but grow red hot, and red hot smoke can appear no other than flame.* Newton.

*Smoke the fellow there.* Congreve.

*Frictions of the back-bone with flannel, smoked with penetrating aromatical substances, have proved effectual.* Arbuthnot.

*For Venus, Cytherea was invoked,*

*Altars for Pallas to Athena smoked.* Granville.

*Tenants with sighs the smokeless towers survey, And turn the unwilling steed another way.* Popé.

*With hasty hand the ruling reins he drew, He lashed the coursers, and the coursers flew ; Beneath the bending yoke alike they held Their equal pace, and smoked along the field.* Id.

**SMOKE** is a dense elastic vapor arising from burning bodies. As this vapor is extremely disagreeable to the senses, and often prejudicial to the health, mankind have fallen upon several contrivances to enjoy the benefit of fire without being annoyed by smoke. The most universal of these contrivances is a tube leading from the chamber in which the fire is kindled to the top of the building, through which the smoke ascends and is dispersed into the atmosphere. These tubes are called chimneys; which, when constructed in a proper manner, carry off the smoke entirely; but, when improperly constructed, they carry off the smoke imperfectly, to the great annoyance of the inhabitants. Although we could naturally imagine that the causes which occasion smoke in rooms are exceedingly various, yet, upon examination, it will be found that they may all be reduced to one of these three general heads, each of which will admit of several varieties. 1. To a fault in the form of the tube or chimney itself. 2. To some fault in the other parts of the building, and a wrong position of the chimney with respect to these. Or, 3. To an improper situation of the house with respect to external objects. It is of the utmost consequence, in attempting a cure, accurately to distinguish from which of these defects the smoke proceeds, otherwise the means used will be very uncertain. The celebrated Dr. Franklin's Treatise on Smoky Chimneys is well known; but, able as his writings on the subject have been, they are now in a great measure superseded by the late improvements in constructing fire places, suggested by count Rumford. Chimneys whose funnels go up in the north wall of a house, and are exposed to the north winds, are not so apt to draw well as those in a south wall; because, when rendered cold by those winds, they draw downwards. Chimneys enclosed in the body of a house are better than those whose funnels are exposed in cold walls. Chimneys in stacks are apt to draw better than separate funnels, because the funnels that have constant fires in them warm the tapers in some degree that have none.

**SMOKE FARTHINGS.** The pentecostals or cus-

*tomary oblations offered by the dispersed inhabitants within a diocese when they made their procession to the mother or cathedral church, came by degrees into a standing annual rent, called smoke farthings.*

**SMOKE-SILVER.** Lands were holden in some places by the payment of the sum of 6d. yearly to the sheriff, called smoke-silver (Par. 4. Edw. VI.) Smoke-silver and smoke-penny are to be paid to the ministers of divers parishes as a modus in lieu of tithe-wood; and in some manors, formerly belonging to religious houses, there is still paid, as appendant to the said manors, the ancient penterence, by the name of smoke-money.—Twisd. Hist. Vindicat. 77. The bishop of London, anno 1444, issued out his commission, Ad levandum le smoke farthings, &c.

**SMOLENSKO**, a government of the Russian empire, to the west of Moscow, between long.  $30^{\circ} 50'$  and  $33^{\circ} 30'$  E., lat.  $53^{\circ} 30'$  and  $56^{\circ} 25'$  N. Its territorial extent is 21,400 square miles; its inhabitants 1,050,000, mostly Russians, with some Poles, Germans, and Jews. The surface is generally level; for, though it contains some heights, these are not of great size or extent. The principal rivers are the Duna, the Dnieper, the Desna, the Sosha, the Kasplia, the Uga, and the Viasma. The lakes are also numerous, being reckoned at more than 100, great and small. The climate is cold but healthy. The soil consists of a mixture of clay or sand, with black mould, and is on the whole tolerably fertile. Corn, hemp, and flax, are cultivated, and horses, black cattle, and sheep, are numerous. A great part of the uncultivated land is covered by forests. The manufactures are quite insignificant, but the distilling of spirituous liquors is carried on on a large scale. This government corresponds to White Russia properly so called. It was ceded by Poland in 1667, and the cession confirmed in 1686.

**SMOLENSKO**, a large town of European Russia, the capital of the above government, is built partly on two hills, and in a valley between them. Here the Dnieper is a navigable stream flowing from east to west. The part to the south of that river is surrounded with a massive wall thirty feet in height, fifteen thick, and a mile and three-quarters in circuit. The lower part of the wall is of stone, the upper of brick. The whole is surrounded with a ditch and a sort of covered way; and some modern redoubts have been erected as outworks. Smolensko is thus a place of some strength, and, standing on the great road to Moscow, the Russians made here their first determined stand to the advance of the French in 1812. An obstinate contest took place on the 16th and 17th of August, in which the town was bombarded: the Russians were compelled to fall back, and the French extinguished the flames; but on quitting it in their retreat, in November following, they blew up part of the works; and, as most of the houses were of wood, about the half of them were destroyed.

Smolensko contains within its circumference several large gardens; the houses are generally of one story, and the population is supposed not to exceed 12,600. One large street divides it into two, paved with stone; the others are paved,

or rather floored, with planks. The part rebuilt since 1812 is of a good construction, and the public edifices are respectable. Here are nearly twenty churches and chapels, besides two cathedrals, and places of worship for Lutherans and Catholics. Smolensko is a bishop's see, has a seminary for priests, and gymnasium or high school. It has also military and trade's school, a foundling hospital, and a consistory. The manufactures are linen, leather, soap, and hats; and there is a pretty active trade in corn, hemp, wood, honey, wax, and furs. Prince Potemkin, the favorite and general of Catharine II., was a native of this town. 235 miles W.S.W. of Moscow, and 350 south by east of St. Petersburg.

**S M O L L E T** (Tobias), M. D., an eminent Scottish author, was born in 1720, at a village within two miles of Cameron, on the banks of the Leven. He received a classical education, and was bred to the practice of physic and surgery; and in the early part of his life served as a surgeon's mate in the navy. The incidents that befel him, during his acting in this capacity, served as a foundation for his *Roderic Random*, one of the most entertaining novels in the English tongue. He was present at the siege of Carthagena, and in that novel has given a faithful, though not very pleasing account, of the management of that ill-conducted expedition, which he censures in the warmest terms, from circumstances which fell under his own particular observation. His connexion with the sea seems not to have been of long continuance. The first piece he published, that we know of with certainty, is a Satire, in two parts, printed first in the years 1746 and 1747, and reprinted in a Collection of his Plays and Poems in 1777. About this period, or some time before, he wrote for Mr. Rich an opera, entitled *Alceste*, which has never been either performed or printed. At the age of eighteen he wrote a tragedy entitled *The Regicide*, founded on the assassination of king James I. at Perth. In the preface to this piece, published by subscription in 1749, he bitterly complained against false patrons, and the duplicity of theatrical managers. The warmth and impetuosity of his temper hurried him, on this occasion, into unjust reflections against the excellent George lord Lyttleton (see LYTTLETON) and Mr. Garrick; the former he characterised in the novel of *Peregrine Pickle*, and he added a burlesque on the beautiful Monody written by that nobleman on the death of his lady. Against Mr. Garrick he made illiberal ill-founded criticisms; and, in his novel of *Roderic Random*, gave a very unfair representation of his treatment of him respecting this tragedy. Of this conduct he afterwards repented, and acknowledged his errors; though, in the subsequent editions of the novel, the passages which were the hasty effusions of disappointment have not been omitted. However, in giving a sketch of the liberal arts in his History of England, he afterwards remarked that, 'the exhibitions of the stage were improved to the most exquisite entertainment by the talents and management of Mr. Garrick, who greatly surpassed all his predecessors of this and perhaps every other nation, in his genius for acting, in the sweetness and

variety of his tones, the irresistible magic of his eye, the fire and vivacity of his actions, the eloquence of attitude, and the whole pathos of expression. Candidates for literary fame appeared, even in the higher sphere of life, embellished by the nervous sense and extensive erudition of a Corke; by the delicate taste, the polished muse, and the tender feelings of a Lyttleton.' Not satisfied with this public declaration, he wrote an apology to Mr. Garrick in still stronger terms. With these ample concessions Mr. Garrick was completely satisfied; so that in 1757, when Smollet's comedy of the *Reprisals*, an after-piece of two acts, was performed at Drury Lane theatre, the latter acknowledged himself highly obliged for the friendly care of Mr. Garrick exerted in preparing it for the stage; and still more for his acting the part of Lusignan in *Zara* for his benefit, on the sixth instead of the ninth night, to which he was only entitled by the custom of the theatre. The Adventures of Roderic Random, published in 1748, 2 vols. 12mo., a book which still continues to have a most extensive sale, first established the doctor's reputation. All the first volume and the beginning of the second, appears to consist of real incidents and characters, though certainly a good deal heightened and disguised. The judge his grandfather, Crab and Potion the two apothecaries, and 'Squire Gawky, were characters well known in that part of the kingdom where the scene was laid. Captains Oakhum and Whiffle, Drs. Mackshane and Morgan, were also said to be real personages; but their names we have either never learned or have now forgotten. A bookbinder and barber long eagerly contended for being shadowed under the name of Strap. The doctor seems to have enjoyed a peculiar felicity in describing sea characters, particularly the officers and sailors of the navy. His Trunnion, Hatchway, and Pipes, are highly finished originals; but what exceeds them all, and perhaps equals any character that has yet been painted by the happiest genius of ancient or modern times, is his Lieutenant Bowling. This is indeed nature itself; original, unique, and sui generis. By the publication of this work the doctor had acquired so great a reputation, that henceforth a certain degree of success was insured to every thing known to proceed from his hand. In the course of a few years, the Adventures of Peregrine Pickle appeared; a work of great ingenuity and contrivance in the composition, and in which an uncommon degree of erudition is displayed, particularly in the description of the entertainment given by the Republican doctor, after the manner of the ancients. Under this personage the late Dr. Akenside, author of The Pleasures of Imagination, is supposed to be characterised; and it would be difficult to determine whether profound learning or genuine humor predominate most in this episode. Another episode of the Adventures of a Lady of Quality, likewise inserted in this work, contributed greatly to its success, and is indeed admirably executed; the materials, it is said, the lady herself (the celebrated lady Vane) furnished. These were not the only original compositions of this stamp with which the doctor has favore<sup>d</sup>

the public. Ferdinand count Fathom and Sir Launcelot Greaves are still in the list of what may be called reading novels, and have gone through several editions; but there is no injustice in placing them in a rank far below the former. No doubt invention, character, composition, and contrivance, are to be found in both; but then situations are described which are hardly possible, and characters are painted which, if not altogether unexampled, are at least incompatible with modern manners; and which ought not to be, as the scenes are laid in modern times. The doctor's last work was of much the same species, but cast into a different form—*The Expedition of Humphry Clinker*. It consists of a series of letters, written by different persons to their respective correspondents. He has here carefully avoided the faults which may be justly charged to his two former productions. There are no extravagant characters nor unnatural situations. On the contrary, an admirable knowledge of life and manners is displayed; and most useful lessons are given applicable to interesting but to very common situations. We know not whether the remark has been made, but there is certainly a very obvious similitude between the characters of the three heroes of the doctor's chief productions. Roderic Random, Peregrine Pickle, and Matthew Bramble, are all brothers of the same family. The same satirical, cynical, disposition, the same generosity and benevolence, are the distinguishing and characteristical features of all three; but they are far from being servile copies or imitations of each other. They differ as much as the Ajax, Diomed, and Achilles of Homer. This was undoubtedly a great effort of genius; and the doctor seems to have described his own character at the different stages and situations of his life. Before he took a house at Chelsea, he attempted to settle as practitioner of physic at Bath; and with that view wrote *A Treatise on the Bath Waters*; but was unsuccessful, chiefly because he could not render himself agreeable to the women. This was doubtless extraordinary; for those who knew Smollet at that time acknowledge that he was as graceful and handsome a man as any of the age he lived in; and there was a certain dignity in his air and manner which could not but inspire respect wherever he appeared. Perhaps he was too soon discouraged. Abandoning physic as a profession, he fixed his residence at Chelsea, and turned his thoughts entirely to writing. Yet, as an author, he was not nearly so successful as his genius and merit certainly deserved. He never acquired a patron among the great, who by his favor or beneficence relieved him from the necessity of writing for a subsistence. The truth is, Dr. Smollet possessed a loftiness and elevation of sentiment and character which appears to have disqualified him for paying court to those who were capable of conferring favors. It would be wrong to call this disposition haughtiness; for to his equals and inferiors he was ever polite, friendly, and generous. Booksellers may therefore be said to have been his only patrons; and from them he had constant employment in translating, compiling, and reviewing. He translated *Gil Blas* and *Don Quixote*, both so happily, that

all the former translations of those excellent productions of genius have been almost superseded by his. His name likewise appears at a translation of Voltaire's Prose Works; but little of it was done by his own hand; he only revised it, and added a few notes. He was concerned in a great variety of compilations. His *History of England* was the principal work of that kind. It had a most extensive sale; and the doctor is said to have received £2000 for writing it and the continuation. In 1755 he set on foot the Critical Review, and continued the principal manager of it till he went abroad for the first time in 1763. He was, perhaps, too acrimonious sometimes in the conduct of that work; and at the same time displayed too much sensibility when any of the unfortunate authors attempted to retaliate, whose works he had perhaps justly censured. Among other controversies, in which his engagements in this publication involved him, the most material in its consequences was that occasioned by his remarks on a pamphlet published by admiral Knowles. That gentleman, in his defence of his conduct on the expedition to Rochefort, published a vindication of himself; which, falling under the doctor's examination, produced some very severe strictures both on the performance and on the character of the writer. The admiral immediately commenced a prosecution against the printer; declaring, at the same time, that he desired only to be informed who the writer was, that if he proved to be a gentleman he might obtain the satisfaction of one from him. In this affair the doctor behaved both with prudence and with spirit. Desirous of compromising the dispute with the admiral, in an amicable manner, he applied to his friend Mr. Wilkes to interpose his good offices with his opponent. The admiral, however, was inflexible; and, just as sentence was going to be pronounced against the printer, the doctor came into court, avowed himself the author of the strictures, and declared himself ready to give Mr. Knowles any satisfaction he chose. The admiral immediately commenced a fresh action against the doctor, who was found guilty, fined £100, and condemned to three months imprisonment in the King's Bench. It is there he is said to have written the Adventures of Sir Launcelot Greaves, in which he has described some remarkable characters, then his fellow-prisoners. When lord Bute was called to the chief administration of affairs, he was prevailed upon to write in defence of that nobleman's measures; which he did in a weekly paper called the *Briton*. This gave rise to the famous North Briton; wherein, according to the opinion of the public, he was rather baffled. The truth is the doctor did not seem to possess the talents necessary for political altercation. He wanted temper and coolness; and his friends accused his patron of having denied him the necessary information, and even neglected the fulfilling of some of his other engagements with him. Be that as it will, the doctor is said not to have forgotten him in his subsequent performances. Besides the *Briton*, Dr. Smollet is supposed to have written other pieces in support of the cause he espoused. The Adventures of an Atom, in two volumes, are known to be his production. His con-

stitution being at last greatly impaired by a sedentary life and assiduous application to study, he went abroad for his health in June 1763, and continued in France and Italy two years. He wrote an account of his travels in a series of letters to some friends, which were afterwards published in two volumes 8vo., 1766. During all that time he appears to have labored under a constant fit of chagrin. A very slight perusal of these letters will sufficiently evince that this observation is founded on fact, and is indeed a melancholy instance of the influence of bodily distemper over the best disposition. His relation of his travels is actually cynical; for which Sterne, in his Sentimental Journey, has animadverted on him under the character of Smelfungus. The doctor lived to return to his native country; but his health continuing to decline, and meeting with fresh mortifications and disappointments, he went back to Italy, where he died, October 21, 1771. He was employed, during the last years of his life, in abridging the Modern Universal History, great part of which he had originally written himself, particularly the histories of France, Italy, and Germany. He certainly met with many mortifications and disappointments, which, in a letter to Garrick, he thus feelingly expresses:—‘I am old enough to have seen and observed that we are all playthings of fortune; and that it depends upon something, as insignificant and precarious as the tossing up of a halfpenny, whether a man rises to affluence and honors, or continues to his dying day struggling with the difficulties and disgraces of life.’ It would be needless to expatiate on the character of a man so well known as Smollet, who has, besides, given so many strictures of his own character and manner of living in his writings, particularly in Humphry Clinker; where he appears under the appellation of Mr. Serle, and has an interview with Mr. Bramble; and his manner of living is described in another letter, where young Melford is supposed to dine with him at his house in Chelsea. No doubt he made money by his connexions with the booksellers; and had he been a rigid economist, or endowed with the gift of retention (an expression of his own), he might have lived and died very independent. However, to do justice to his memory, his difficulties, whatever they were, proceeded not from extravagance or want of economy. He was hospitable, but not ostentatiously so; and his table was plentiful, but not extravagant. No doubt he had his failings; but it would, perhaps, be difficult to name a man who was more respectable for the qualities of his head, or more amiable for the virtues of his heart. Since his death a monument has been erected to his memory near Leghorn, on which is inscribed an epitaph written in Latin by his friend Dr. Armstrong, author of the Art of Preserving Health, and many other excellent pieces. An inscription written in Latin was likewise inscribed on a pillar erected to his memory on the banks of the Leven, by one of his relations. Yet so late as 1785 the widow of Dr. Smollet was residing in indigent circumstances at Leghorn. On this account the tragedy of Venice Preserved was acted for her benefit at Edinburgh on the

5th of March, an excellent prologue spoken on that occasion, and a considerable sum raised and remitted to her. The pieces inserted in the posthumous collection of Dr. Smollet's plays and poems are, The Regicide, a tragedy; The Reprisal, a comedy; Advice and Reproof, two satires; The Tears of Scotland; Verses on a Young Lady; a Love Elegy, in imitation of Tibullus; two Songs; a Burlesque Ode; Odes to Mirth, to Sleep, to Leven Water, to Blue-eyed Ann, and to Independence. The late lord Gardenstone gives the following character of Smollet as an author:—‘For the talent of drawing a natural and original character, Dr. Smollet, of all English writers, approaches nearest to a resemblance of our imitable Shakspeare. What can be more chaste, amusing, or interesting, than Random, Trunnion, Hatchway, Lismahago, Pallet, the Pindaric physician, Tom Clarke, farmer Prickle, Strap, Clinker, Pipes, the duke of Newcastle, and Timothy Crabtree! In the character of honest Bowling, Smollet, if anywhere, excels himself.’ After a review of several other of Smollet's characters, his lordship adds, ‘With so much merit, Dr. Smollet had likewise his imperfections. His oaths and imprecations are indecent and unnecessary; and the adventures of lady Vane ought to be expunged from the pages of a classical author. Smollet's talents reflect honor on his country: next to Buchanan he is by far the greatest literary genius of whom North Britain has to boast.’—Miscel. p. 194, 195.

SMOOTII, *adj. & v. a.* } Sax. *rmeð, rmœð*  
SMOOTIN', *v. a.* } of myðgian, to soften;  
SMOOTH FACED, *adj.* } Welsh *mwyth*. Even;  
SMOOTH'LY, *adv.* } level; not rough; hav-  
SMOOTH'NESS, *n. s.* } ing no asperities;  
equal in pace; flowing: hence mild; gentle;  
bland: to smooth and smoothen are both used  
for to make smooth in any way; to ease; flatter:  
smooth-faced is mild-looking; of soft or gentle  
air: and the adverb and noun substantive cor-  
respond with the adjective.

Behold Esau my brother is a hairy man, and I am a smooth man. *Gen. xxvii. 11.*

The carpenter encouraged the goldsmith, and he that smootheth with the hammer him that smote the anvil. *Isaiah xli. 7.*

Had Joshua been mindful, the fraud of the Gibeonites could not so smoothly have past unespied till there was no help. *Hooker.*

Had it been a stranger, not my child,  
To smooth his fault, I would have been more mild. *Shakspeare.*

Now, breathe we, lords; good fortune bids us pause  
And smooth the frowns of war with peaceful looks. *Id.*

This man's a flatterer? if one be,  
So are they all; for every greeze of fortune  
Is smoothed by that below. *Id.*  
O, shall I say I thank you, gentle wife?  
—Not so, my lord, a twelvemonth and a day;  
I'll mark no words that smooth-faced wooers say. *Id.*

She is too subtle for thee; and her smoothness,  
Her very silence, and her patience,  
Speak to the people, and they pity her. *Id.*  
The subtle fiend,  
Though inly stung with anger and disdain,  
Dissembled, and this answer smooth returned.  
*Milton's Paradise Regained.*

By the hand he took me raised,  
And over fields and waters, as in air,  
*Smooth*-sliding without step. *Milton.*

*Smooth* Adonis from his rock  
Ran purple to the sea. *Id.*

In their motions harmony divine

So smooths her charming tones. *Id.*

As French has more fineness and smoothness at this time, so it had more compass, spirit, and force in Montaigne's age. *Temple,*

The outlines must be smooth, imperceptible to the touch, and even without eminences or cavities. *Dryden.*

Nor box nor limes, without their use ;  
*Smooth*-grained, and proper for the turner's trade,  
Which curious hands may carve, and steel with ease  
invade. *Id.*

Smiling she seemed, and full of pleasing thought ;  
From ocean as she first began to rise,  
And smoothed the ruffled seas, and cleared the skies. *Id.*

Restored it soon will be ; the means prepared,  
The difficulty smoothed, the danger shared :  
Be but yourself. *Id.*

The nymph is all into a laurel gone,  
The smoothness of her skin remains alone. *Id.*

Virgil, though smooth, where smoothness is required, is so far from affecting it, that he rather disdains it ; frequently using synalephas, and concluding his sense in the middle of his verse. *Id.*

A countryman feeding his flock by the seaside, it was so delicate a fine day, that the smoothness of the water tempted him to set up for a merchant. *L'Estrange.*

It brings up again into the mouth that which it had swallowed, and, chewing it, grinds and smooths it, and afterwards swallows it into another stomach. *Ray on the Creation.*

With edged grooving tools they cut down and smoothen the exuberances left. *Moxon's Mechanical Exercises.*

Fallacious drink ! ye honest men, beware,  
Nor trust its smoothness ; the third circling glass  
Suffices virtue. *Philipps.*

So, Dick adept, tuck back thy hair ;  
And I will pour into thy ear  
Remarks which none did e'er disclose  
In smooth-paced verse or hobbling prose. *Prior.*

When sage Minerva rose,

From her sweet lips smooth elocution flows. *Gay.*  
He was smooth-tongued, gave good words, and seldom lost his temper. *Arbuthnot. History of John Bull.*

The madding monarchs to compose,  
The Pylian prince, the smooth-speeched Nestor, rose. *Tichel.*

He for the promised journey bids prepare  
The smooth-haired horses and the rapid car. *Pope.*  
Now on the wings of winds our course we keep ;  
The God hath smoothed the waters of the deep. *Id. Odyssey.*

All your muse's softer art display ;  
Let Carolina smooth the tuneful lay ;  
Lull with Amelia's liquid name the Nine,  
And sweetly flow through all the royal line. *Pope.*

The musick of that murmuring spring  
Is not so mournful as the strains you sing ,  
Nor rivers winding through the vales below  
So sweetly warble, or so smoothly flow. *Id.*

**SMOOTH'ER, v. u., v. n. & n. s.** *Sax. smopan ; Belg. smooren.* To suffocate with smoke, or by exclusion of the air; suppress: to smoke without vent; be suppressed: a smoke; thick dust; state of suppression.

She might give passage to her thoughts, and so as it were utter out some smoke of those flames, wherewith else she was not only burned but smothered. *Sidney.*

Lewd and wicked custom, beginning perhaps at the first amongst few, afterwards spreading into greater multitudes, and so continuing, from time may be of force, even in plain things, to smother the light of natural understanding. *Hooker.*

We smothered

The most replenished sweet work of nature,  
That from the prime creation e'er she framed. *Shakespeare.*

Thus must I from the smoke into the smother,  
From tyrant duke into a tyrant brother. *Id.*

This unfortunate prince, after a long smother of discontent, and hatred of many of his nobility and people, breaking forth at times into seditions, was at last distressed by them. *Bacon.*

Nothing makes a man suspect much, more than to know little ; and therefore men should procure to know more, and not to keep their suspicions in smother. *Id. Essays.*

Hay and straw have a very low degree of heat ; but yet close and smothering, and which dieth not. *Id. Natural History.*

She was warmed with the graceful appearance of the hero : she smothered those sparkles out of decency but conversation blew them up into a flame. *Dryden's Aeneid, Dedication.*

Where yon disordered heap of ruin lies,  
Stones rent from stones, where clouds of dust arise  
Amid that smother Neptune holds his place. *Id. Aeneid.*

The helpless traveller, with wild surprise,  
Sees the dry desert all around him rise,  
And smothered in the dusty whirlwind dies. *Addison's Cato.*

The greater part enter only like mutes to fill the stage, and spend their taper in smoke and smother. *Collier on Fane.*

**SMOUL'DERING, I** A participle ; but I SMOUL'DRY. I know not whether the verb smoulder be in use, says Dr. Johnson. We seem to recollect having seen it frequently in modern authors. *Sax. smogan, to smother ; Belg. smvel, hot. Burning and smoking without vent.*

None can breathe, nor see, nor hear at will,  
Through smouldry cloud of dusky stinking smoke,  
That the' only breath him daunts who hath escaped  
the stroke. *Poet. Queen.*

In some close pent room it crept along,  
And, smouldering as it went, in silence fed ;  
Till the' infant monster, with devouring strong,  
Walked boldly upright with exalted head. *Dryden.*

**SMUG, adj.** Belg. smucken, to dress. Nice ; spruce ; dressed with affectation of niceness.

There I have a bankrupt for a prodigal, who dares scarce shew his head on the Rialto ; a beggar, that used to come so smug upon the mart. *Shakespeare. Merchant of Venice.*

My men,  
In Circe's house, were all, in severall baine  
Studiously sweetened, smuged with oile, and decked  
With in and out weeds. *Chapman.*

He who can make your visage less horrid, and your person more smug, is worthy some good reception. *Spectator.*

Lilies and roses will quickly appear,  
And her face will look wonderous smugly. *Gay.*

'SMUGGLE, v. a. } Belg. smockelen. To  
SMUGGLER, n. s. } import or export goods

without paying the customs. See below. The smuggler is the nefarious actor in these exploits.

**SMUGGLING.** The duties of customs were originally instituted in order to enable the king to afford protection to trade against pirates : they have since been continued as a branch of the public revenue. As duties imposed upon the importation of goods necessarily raise their price above what they might otherwise have been sold for, a temptation is presented to import the commodity clandestinely and to evade the duty. Many persons, prompted by the hopes of gain, and considering the violation of a positive law of this nature as in no respect criminal (an idea in which they have been encouraged by a great part of the community, who make no scruple to purchase smuggled goods), have engaged in this illicit trade. It was impossible that government could permit this practice, which is highly injurious to the fair trader, as the smuggler is enabled to undersell him, while at the same time he impairs the national revenue, and thus evades the end for which these duties were appointed. Such penalties are therefore inflicted as it was thought would prevent smuggling. Many laws have been made with this view. When we consider the nature, and still more the history, of mankind, we must allow that the enacting of severe laws is not always the way to prevent crimes. It were indeed much to be wished that there were no such thing as a political crime ; for the generality of men, but especially the lower orders, not discerning the propriety or utility of such laws, consider them as oppressive and tyrannical, and never hesitate to violate them when they can do it with impunity. Instead therefore of punishing smugglers, it would be much better to remove the temptation. But the high duties which have been imposed upon the importation of many different sorts of foreign goods, to discourage their consumption in Great Britain, have in many cases served only to encourage smuggling ; and in all cases have reduced the revenue of the customs below what more moderate duties would have afforded. The saying of Swift, that in the arithmetic of the customs two and two, instead of making four, make sometimes only one, holds perfectly true with regard to such heavy duties, which never could have been imposed, had not the mercantile system taught us, in many cases, to employ taxation as an instrument, not of revenue, but of monopoly. The bounties which are sometimes given upon the exportation of home produce and manufactures, and the drawbacks which are paid upon the re-exportation of the greater part of foreign goods, have given occasion to many frauds, and to a species of smuggling more destructive of the public revenue than any other. To obtain the bounty or drawback, the goods, it is well known, are sometimes shipped and sent to sea, but soon afterwards clandestinely relanded in some other part of the country. Heavy duties being imposed upon almost all goods imported, our merchant importers smuggle as much, and make entry of as little as they can. Our merchant exporters, on the contrary, make entry of more than they export ; sometimes out of vanity, and to pass for great dealers in goods which pay no duty ;

and sometimes to gain a bounty or a drawback. Our exports, in consequence of these different frauds, appear upon the custom-house books greatly to overbalance our imports ; to the unspeakable comfort of those politicians who measure the national prosperity by what they call the balance of trade.

The smuggling bill of 1826 contains the principal provisions now in force in Great Britain and its dependencies.

#### OF SMUGGLING GENERALLY

From and after the 5th of January, 1826, this act, and all the provisions therein contained, shall have effect and come into and be and continue in full force and operation, for the prevention of smuggling, and shall extend to any law in force, or hereafter to be made, relating to the revenue or management of the customs.

If any vessel or boat belonging in the whole or in part to his majesty's subjects, or whereof one-half of the persons on board or discovered to have been on board the vessel or boat be subjects of his majesty, be found within four leagues of the coast of that part of the united kingdom which is between the North Foreland on the coast of Kent and Beachy Head on the coast of Sussex, or within eight leagues of the coast of any other part of the united kingdom, or shall be discovered to have been within the said distances, not proceeding on her voyage, wind and weather permitting, having on board or in any manner attached or affixed thereto, or having had on board or in any manner attached or affixed thereto, or conveying or having conveyed in any manner any goods whatsoever liable to forfeiture by this or any other act relating to the revenue of customs upon being imported into the united kingdom, then not only all such goods, together with their packages, and all goods contained therein, but also the vessel or boat, together with all her guns, furniture, ammunition, tackle, and apparel, shall be forfeited : provided that such distance of eight leagues shall be measured in any direction between the southward and eastward of Beachy Head ; and the provisions of this act shall extend to such distance of eight leagues in every direction from Beachy Head, although any part of such limits may exceed the distance of four leagues from any part of the coast of Great Britain to the eastward of Beachy Head aforesaid.—§ 2.

If any vessel or boat, not being square-rigged, belonging in the whole or in part to his majesty's subjects, or whereof one-half of the persons on board or discovered to have been on board the vessel or boat be subjects of his majesty, be found in any part of the British or Irish channels, or elsewhere on the high seas, within 100 leagues of any part of the coasts of the united kingdom, or be discovered to have been within the said limits or distances, having on board or in any manner attached or affixed thereto, or having had on board or in any manner attached or affixed thereto, or conveying or having conveyed in any manner, any brandy or other spirits in any cask or package of less size or content than four gallons (excepting only for the use of the seamen then belonging to and on board such vessel or

boat, not exceeding two gallons for each seaman,) or any tea exceeding six pounds in the whole, or any tobacco or snuff in any cask or package whatever, containing less than 450 lbs. or packed separately in any manner within any such cask or package (except loose tobacco for the use of the seamen, not exceeding five pounds for each seaman), or any cordage or other article adapted and prepared for slinging small casks, or any casks or other vessels whatsoever capable of containing liquids, of less size or content than forty gallons, of the sort or description used or intended to be used or fit or adapted for the smuggling of spirits, or any materials for the forming, making, or constructing such casks or vessels, or any syphon, tube, hose, or implements whatsoever, for the broaching or drawing any fluid, or any articles or implements or materials adapted for the repacking tobacco or snuff (unless the cordage or other articles as aforesaid are really necessary for the use of the vessel or boat, or are a part of the cargo of the vessel or boat, and included in the regular official documents of the vessel or boat), in such case the spirits, tea, tobacco, or snuff, together with the casks or packages containing the same, and the cordage or other articles, and also the vessel or boat, with all her guns, furniture, ammunition, tackle, and apparel therein, shall be forfeited.—§ 3.

If any *foreign vessel* or boat (not being square-rigged), in which there shall be one or more subjects of his majesty, be found within four leagues of that part of the United Kingdom which is between the north Foreland on the coast of Kent and Beachy Head on the coast of Sussex, or within eight leagues of any other part of the coast of the United Kingdom, to be measured as aforesaid, or shall be discovered to have been within the said distances, not proceeding on her voyage, wind and weather permitting, having on board or in any manner attached or affixed thereto, or having had on board or in any manner attached or affixed thereto, or conveying or having conveyed in any manner, any brandy or other spirits, in any cask or package of less size or content than forty gallons (except only for the use of the seamen belonging to and on board such vessel, not exceeding two gallons for each seaman), or any tea, exceeding six pounds in the whole, or any tobacco or snuff in any cask or package whatsoever containing less than 450 lbs. or packed separately in any manner within such cask or package (except loose tobacco for the use of the seamen, not exceeding five pounds for each seaman on board such vessel), then such vessel or boat, with all her guns, furniture, ammunition, tackle, and apparel, shall be forfeited. And if any foreign vessel whatsoever be found within one league of the coast of the United Kingdom, not proceeding on her voyage, wind and weather permitting, having on board or in any manner attached or affixed thereto, or having had on board or in any manner attached or affixed thereto, or conveying or having conveyed in any manner, within such distance, any goods whatsoever, liable to forfeiture by this or any other act relating to the revenue of customs, upon being imported into the United Kingdom, in such case the vessel, together with her guns,

furniture, ammunition, tackle, and apparel, and all such goods laden therein, shall be forfeited.—§ 5.

When any vessel or boat belonging in the whole or in part to his majesty's subjects, or whereof one half of the persons on board are subjects of his majesty, shall be found within four or eight leagues of the coast of the United Kingdom as aforesaid, or be found as aforesaid in the British or Irish channels, or elsewhere within 100 leagues of the coast of this kingdom, and chase shall be given, or signal made by any vessel in his majesty's service or in the service of the revenue, hoisting the proper pendant and ensign as hereinafter mentioned, in order to bring such vessel, or boat to, if any person on board such vessel or boat shall, during the chase, or before such vessel or boat shall bring to, *throw overboard* the cargo or any part of the same (unless through unavoidable necessity or for the preservation of such vessel or boat, the vessel or boat having a legal cargo on board), or shall stave or destroy any part of the cargo to prevent seizure thereof, in such case the vessel or boat, with all her guns, furniture, ammunition, tackle, and apparel, shall be forfeited.—§ 6.

If any vessel (not being square-rigged, nor a galliott of not less than fifty tons burthen) or any boat coming from Brest on the coast of France, or from any place between Brest on the coast of France and Cape Finisterre on the coast of Spain, including all islands on the coast of France and Spain between those places, or coming from any place between the Helder Point on the coast of Holland and North Bergen on the coast of Norway, or from any place as far up the Cattegat as Gottenburgh, including all the islands on the coasts between those places, shall arrive in any of the ports of the United Kingdom, or shall be found at anchor or hovering within the limits of any of the ports thereof, and not proceeding on her voyage, wind and weather permitting, having on board, for the use of the seamen then belonging to and on board such vessel or boat, any spirits exceeding one half gallon for each seaman, or having on board any tea, exceeding four pounds in the whole, or having on board any tobacco (excepting loose tobacco, not exceeding two pounds for each seaman), then not only all such goods, but also the vessel or boat, with all her materials, shall be forfeited.—§ 7.

If any vessel (not being square-rigged, nor a galliott of not less than fifty tons burthen), or any boat coming from any place between Brest on the coast of France and the Helder Point on the coast of Holland, including the Texel Isle, and all places on the Zuyder Zee, and all islands on the coasts of France, the Netherlands, and Holland, between Brest and the Texel, shall arrive in any of the ports of the United Kingdom, or be found at anchor or hovering within the limits of any of the ports thereof, and not proceeding on her voyage, wind and weather permitting, having on board, for the use of the seamen then belonging to and on board such vessel or boat, any spirits exceeding one-half gallon for each seaman, or having on board any tea exceeding two pounds in the whole, or having on board any tobacco, except loose tobacco, not exceed-

ing one pound for each seaman, then not only all such goods, but also the vessel or boat, with all her materials, shall be forfeited.—§ 8.

Vessels within certain distances of Guernsey, &c., having on board contraband goods, or sailing thence with an improper number of men; or taking on board implements for smuggling, or without a clearance, are to be forfeited.

If any vessel or boat whatever be found within the limits of any port of the United Kingdom with a cargo on board, and such vessel shall afterwards be found *light* or in *ballast*, and the master is unable to give a due account of the place within the United Kingdom where such vessel shall have legally discharged her cargo, such vessel or boat, with her guns, furniture, ammunition, tackle, and apparel, shall be forfeited.—§ 13.

*When vessels not bringing to during chase may be fired at.*—In case any vessel or boat, liable to seizure or examination under any act or law for the prevention of smuggling, shall not bring to on being required so to do, on being chased by any vessel in his majesty's navy, having the proper pendant ensign of his majesty's ships hoisted, or by any vessel employed for the prevention of smuggling under the authority of the lords commissioners of the admiralty, or the commissioners of customs, having a pendant and ensign hoisted, of such description as his majesty, by any order in council, or by his royal proclamation under the great seal of the United Kingdom, shall have directed, or shall from time to time in that behalf direct, it shall be lawful for the captain, master, or other person having the command of such vessel in his majesty's navy, or employed as aforesaid (first causing a gun to be fired as a signal), to fire at or into such vessel or boat; and such captain, &c., is hereby indemnified and discharged from any indictment, penalty, or action for damages for so doing; and in case any person be wounded, maimed, or killed by any such firing, and the captain, &c., be sued, molested, or prosecuted, or be brought before any of his majesty's justices of the peace or other justices, or persons having competent authority, for such firing, wounding, maiming or killing, every such justice, or person, is hereby authorised and required, to admit every such captain &c., to bail.

*Hoisting flags in imitation of those of the navy.*—If any person shall, from 5th July 1825, wear, carry, or hoist in or on board any ship or boat whatever belonging to any of his majesty's subjects, whether the same be merchant or otherwise, without particular warrant for so doing from his majesty or his high admiral of Great Britain, or the commissioners for executing the office of high admiral of Great Britain, his majesty's jack commonly called the union jack, or any pendant, ensign, or colors usually worn by his majesty's ships, or any flag, jack, pendant, ensign, or colors, resembling those of his majesty, or those used on board his majesty's ships, or any other ensign or colors than the ensign or colors by any proclamation of his majesty now in force or hereafter to be issued prescribed to be worn, in every such case the master or the owners being on board the same, and every other person so offending shall forfeit £50, which

shall and may be recovered with costs of suit, and it shall be lawful for any officer of his majesty's navy, customs, or excise, to enter on board any such ship or boat, and to seize and take away any such prohibited flag, jack, pendant, ensign, or colors, and the same shall thereupon become forfeited to his majesty's use.—§ 15.

*Shipped prohibited goods, or those wrought to quay.*—If any goods which are or may be prohibited to be exported, be put on board any vessel or boat with intent to be laden or shipped for exportation, or shall be brought to any quay, wharf, or other place in the United Kingdom, in order to be put on board any vessel or boat, for the purpose of being exported; or if any goods, which are prohibited to be exported, be found in any package produced to the officers of the customs, as containing goods not so prohibited, then not only all such prohibited goods, but also all other goods packed therewith, shall be forfeited.—§ 33.

#### OR SEIZURES.

All vessels and boats, and all goods whatsoever liable to forfeiture, under this or any other act relating to the revenue of customs, shall and may be seized in any place either upon land or water, by any officer of his majesty's army, navy, or marines, duly authorised and on full pay, or officer of customs or excise, or any person having authority to seize from the commissioners of customs or excise; and all vessels, boats, and goods so seized shall, as soon as conveniently may be, be delivered into the care of the proper officer appointed to receive the same.—§ 34. And it shall be lawful for any officer of the army, navy, or marines, duly authorised and on full pay, or for any officer of customs, producing his warrant or deputation (if required) to go on board any vessel which shall be within the limits of any of the ports of this kingdom, and to rummage and to search the cabin and all other parts of such vessel for prohibited and uncustomed goods, and to remain on board such vessel during the whole time that the same shall continue within the limits of such port; and also to search any person either on board, or who shall have landed from any vessel; provided such officer shall have good reason to suppose that such person hath any uncustomed or prohibited goods secreted about his person; and if any person obstruct, oppose, or molest any such officer in going or remaining on board, or in entering or searching such vessel or person, every such person shall forfeit £100.—§ 36.

*Of searching persons.*—Before any person shall be searched, by any such officer as aforesaid, it shall be lawful for such person to require such officer to take him or her before any justice of the peace, or before the collector, controller, or other superior officer of customs, who shall determine whether there is reasonable ground to suppose that such person has any uncustomed or prohibited goods about his or her person; and if it appear to such justice, or superior officer of customs, that there is reasonable ground to suppose that such person has any uncustomed or prohibited goods about his or her person, then such justice or officer shall direct such person to be

searched in such manner as he shall think fit; but, if it appear to such justice or officer that there is not reasonable ground to suppose that such person has any uncustomed or prohibited goods about his or her person, then such justice or officer shall forthwith discharge such person, who shall not in such case be liable to be searched; and every such officer is hereby authorised and required to take such person, upon demand, before any such justice or officer, detaining him or her in the meantime: provided that no person, being a *female*, so directed to be searched, shall be searched by any other person than a female, duly authorised for that purpose by the commissioners of customs.—§ 37.

If any *passenger* or other person on board any vessel or boat shall, upon being questioned by any officer of customs, whether he has any foreign goods upon his person, or in his possession, deny the same, and any such goods shall, after such denial, be discovered upon his person, or in his possession, such goods shall be forfeited, and such person shall forfeit treble the value of such goods.—§ 39. And it shall be lawful for any officer of customs, or person acting under the direction of the commissioners of customs, authorised by writ of assistance under the seal of his majesty's court of exchequer, to take a constable, headborough, or other public officer inhabiting near the place, and in the day time to enter into any house, shop, cellar, warehouse, room, or other place, and in case of resistance to break open doors, chests, trunks, and other packages, there to seize and thence to bring any uncustomed or prohibited goods, and to put and secure the same in the custom-house warehouse in the port next to the place whence such goods shall be so taken: provided that for the purposes of this act any such constable, headborough, or other public officer duly sworn as such, may act as well without the limits of any parish, ville, or other place for which he shall be so sworn, as within such limits.—§ 40. All writs of assistance so issued from the court of exchequer shall continue in force during the whole of the reign in which such writs shall have been granted, and for six months from the conclusion of such reign.—§ 41.

*Police officers seizing goods.*—If any goods liable to forfeiture under this or any other act relating to the revenue of customs, be stopped or taken by any police officer, or other person acting by virtue of any act of parliament, or otherwise duly authorised, such goods shall be carried to the custom-house warehouse next to the place where the goods were stopped or taken, and there delivered to the proper officer appointed to receive the same, within forty-eight hours after the said goods were stopped and taken.—§ 42. If any such goods be stopped or taken by such police-officer, on suspicion that the same have been feloniously stolen, it shall be lawful for the said officer to carry the same to the police-office to which the offender is taken, there to remain in order to be produced at the trial of the offender; and in such case the officer is required to give notice in writing to the commissioners of customs of his having so detained the goods, with the particulars of the same, and immediately after the trial all such goods are to be conveyed

and deposited in the custom-house warehouse as aforesaid, to be proceeded against according to law; and in case any police-officer, making detention of any such goods, neglect to convey the same to such warehouse, or to give the notice of having stopped the same as before described, such officer shall forfeit £20.—§ 43.

*Of harbouring prohibited or uncustomed goods.*—Every person not arrested and detained, as hereinafter mentioned, who shall, either in the United Kingdom or the Isle of Man, assist or be otherwise concerned in the unshipping of any goods which are prohibited, or the duties for which have not been paid or secured, or who shall knowingly harbour, keep, or conceal, or shall knowingly permit or suffer to be harboured, kept, or concealed, any goods which have been illegally unshipped without payment of duties, or which have been illegally removed without payment of the same, from any warehouse or place of security in which they may have been originally deposited, or shall knowingly harbour, keep, or conceal, or permit or suffer to be harboured, kept, or concealed, any goods prohibited to be imported, or to be used or consumed in the United Kingdom, or in the Isle of Man: and every person, either in the United Kingdom or the Isle of Man, to whose hands and possession any such uncustomed or prohibited goods shall knowingly come, shall forfeit either the treble value thereof, or the penalty of £100, at the election of the commissioners of his majesty's customs.—§ 45. If any goods, upon which there is a drawback or bounty, be shipped to be exported into parts beyond the seas, and afterwards be unshipped with intention to be relanded in the United Kingdom (unless in case of distress, to save the goods from perishing), then the goods shall be forfeited, and the master of the vessel from which they shall be unshipped, and every person concerned in the unshipping, and the person to whose hands the same shall knowingly come, or who shall knowingly harbour, keep, or conceal, or suffer to be harboured, kept, or concealed, such goods, shall for every such offence forfeit the treble value of the goods, or £100, at the election of the commissioners of customs.—§ 46.

And every person who, by way of insurance or otherwise, shall undertake or agree to deliver any goods to be imported from beyond the seas, at any place in the United Kingdom, without paying the duties due on such importation, or any prohibited goods; or in pursuance of such insurance, or otherwise, shall deliver, or cause to be delivered any uncustomed or prohibited goods, every such person, and every aider or abettor thereof, shall for such offence forfeit £500, over and above any other penalty to which by law he may be liable; and every person who shall agree to pay any money for the insurance or conveyance of such goods, or shall receive or take such goods into his custody or possession, or suffer the same to be so received or taken, shall also forfeit £500, over and above any penalty to which by law he may be liable on account of such goods.—§ 47.

Every person, being a subject of his majesty who shall be found or discovered to have been on board any vessel or boat liable to forfeiture, under this or any other act relating to the revenue

of customs, for being found within four or eight leagues of the coast of the United Kingdom as aforesaid, or for being found or discovered to have been within any of the distances or places in this act mentioned, from or in the United Kingdom, or from or in the Isle of Man, having on board or in any manner attached or affixed thereto, or having had on board or in any manner attached or affixed thereto, or conveying or having conveyed in any manner, such goods or other things as subject such vessel or boat to forfeiture, or who shall be found or discovered to have been on board any vessel or boat, from which any part of the cargo shall have been thrown overboard during chase, or staved or destroyed, shall forfeit £100; and every person, not being a subject of his majesty, who shall be found or discovered to have been on board any vessel or boat, liable to forfeiture for any of the causes aforesaid, within one league of the coast of the United Kingdom or of the Isle of Man, or within any bay, harbour, river, or creek of the said island, shall forfeit for such offence the sum of £100; and it shall be lawful for any officer of the army, navy, or marines, being duly authorised and on full pay, or any officer of customs or excise, or other person acting in his aid, or duly employed for the prevention of smuggling, and they are hereby authorised and required to stop, arrest, and detain every such person, and to convey such person before two or more justices of the peace in the United Kingdom, or a governor, deputy governor, or deemster in the Isle of Man, to be dealt with as hereinafter directed: provided always that any such person proving, to the satisfaction of such justices, governor, deputy governor, or deemster, that he was only a passenger in such vessel or boat, and had no interest whatever either in the vessel or boat, or in the cargo on board the same, shall be forthwith discharged by such justices.—§ 49.

*Signals to Smugglers.*—No person shall, after sunset and before sunrise, between the 21st of September and the 1st of April, or after the hour of eight in the evening and before the hour of six in the morning at any other time in the year, make, or assist in making, or be present for the purpose of assisting in the making of any light, fire, flash, or blaze, or any signal by smoke, or by any rocket, fireworks, flags, firing of any gun or other fire-arms, or any other contrivance or device, or any other signal in or on board, or from any vessel or boat, or on or from any part of the coast or shore of the United Kingdom, or within six miles of any part of such coasts or shores, for the purpose of making or giving any signal to any person on board any smuggling vessel or boat, whether any person so on board of such vessel or boat be or be not within distance to see or hear any such light, fire, flash, blaze, or signal; and if any person, contrary to the true intent and meaning of this act, make, or cause to be made, or assist in making any such light, fire, flash, blaze, or signal, such person so offending shall be guilty of a misdemeanor; and it shall be lawful for any person to stop, arrest, and detain the persons who shall so make, or assist in the making, or who shall be present for the purpose of assisting in making, any such light, fire, flash, blaze, or sig-

nal, and to convey such persons before any two or more of his majesty's justices of the peace residing near the place where such offence shall be committed, who, if they see cause, shall commit the offender to the next county gaol, there to remain until the next court of oyer or terminer, great session, or gaol delivery, or until such persons shall be delivered by due course of law, and it shall not be necessary to prove, on any indictment or information, that any vessel or boat was actually on the coast; and the offenders being duly convicted thereof shall, by order of the court before whom such offenders shall be convicted, either forfeit the penalty of £100, or, at the discretion of such court, be sentenced or committed to the common gaol or house of correction, there to be kept to hard labor for any term not exceeding one year.—§ 52. In case any person be charged with or indicted for having made or caused to be made, or been assisting in making, or been present for the purpose of making or assisting in making any such fire, light, flash, blaze, or other signal, the burthen of proof that such fire, light, flash, blaze, noise, or other thing, so charged as having been made with intent and for the purpose of giving such signal, was not made with such intent and for such purpose, shall be upon the defendant against whom such charge is made, or such indictment is found.—§ 53. It shall be lawful for any person whatsoever to put out or prevent any such light, fire, flash, or blaze, or any smoke, signal, rocket, fire-work, noise, or other device or contrivance made or being made as aforesaid, and to enter and go upon any lands for that purpose, without being liable to any indictment, suit, or action for the same.—§ 54.

*Resisting officers.*—If any person whatsoever, hinder, oppose, molest, or obstruct any officer of the army, navy, or marines, being duly authorised and on full pay, or any officer of customs or excise, in the execution of his duty, or in the due seizing of any goods liable to forfeiture by this or any other act relating to the revenue of customs, or any person acting in his aid, or duly employed for the prevention of smuggling, or rescue or cause to be rescued any goods which have been seized, or shall attempt or endeavour to do so, or shall before, or at, or after any seizure, stave, break, or otherwise destroy any goods to prevent the seizure thereof, or the securing the same, then the parties offending shall forfeit for every such offence £200.—§ 55. If any persons to the number of three or more, armed with fire-arms or other offensive weapons, shall, within the United Kingdom, or within the limits of any port, harbour, or creek thereof, be assembled in order to be aiding and assisting in the illegal exportation of any goods prohibited to be exported, or in the carrying of such goods in order to such exportation, or in the illegal landing, running, or carrying away of prohibited or uncustomed goods, or goods liable to pay any duties which have not been paid or secured, or in the illegal carrying of any goods from any warehouse or other place, as shall have been deposited therein, for the security of the home consumption duties thereon, or for preventing the use or consumption thereof in the United

Kingdom, or in the illegal relanding of any goods which shall have been exported upon de-benture or certificate, or in rescuing or taking away any such goods after seizure, from the officer of customs, or other officer authorised to seize the same, or any person employed by them or assisting them, or from the place where the same shall have been lodged by them, or in rescuing any person who shall have been apprehended for any of the offences made felony by this or any act relating to the revenue of customs, or in the preventing the apprehension of any person who shall have been guilty of such offence; or in case any persons to the number of three or more, so armed, shall, within this kingdom, or within the limits of any port, harbour, or creek thereof, be so aiding; every person so offending, and every person aiding, abetting, or assisting therein, shall, being thereof convicted, be adjudged guilty of felony, and suffer death as a felon, without benefit of clergy.—§ 56.

If any person maliciously shoot at or upon any vessel or boat belonging to his majesty's navy, or in the service of the revenue in any part of the British or Irish channels, or elsewhere on the high seas, within 100 leagues of any part of the coast of the United Kingdom, or maliciously shoot at, maim, or dangerously wound any officer of the army, navy, or marines, being duly authorised and on full pay, or any officer of customs or excise, or any person acting in his aid, or duly employed for the prevention of smuggling, in the due execution of his office or duty, every person so offending, and every person aiding or abetting therein, shall, being lawfully convicted, be adjudged guilty of felony, and suffer death as a felon, without benefit of clergy.—§ 57. And if any person, being in company with more than four other persons, be found with any goods liable to forfeiture under this or any other act relating to the revenue of customs or excise, or in company with one other person within five miles of any navigable river, carrying offensive arms or weapons, or disguised in any way, every such person shall be adjudged guilty of felony, and shall, on conviction of such offence, be transported as a felon for the space of seven years; and, if such offender shall return into the United Kingdom before the expiration of the seven years, he shall suffer as a felon, and have execution awarded against him as a person attainted of felony, without benefit of clergy.—§ 58.

*Spirits floating on the sea.*—No person whatsoever, being a subject of his majesty, other than an officer of the navy, customs, or excise, or some person authorised in that behalf, shall intermeddle with or take up any spirits, being in casks of less content than forty gallons, which may be found floating upon or sunk in the sea; and if any spirits be taken up, and be found or discovered on board any vessel or boat belonging as aforesaid, within the limits of any port of the United Kingdom or Isle of Man, or within the distances in this act before-mentioned, the vessel or boat on which the same shall be found or discovered, together with such spirits, shall be forfeited, and the persons in whose custody the same shall be found shall forfeit the penalty of treble the value of such spirits, or £50, at the election

of the commissioners of customs.—§ 70. All suits, indictments, or informations exhibited for any offence against this or any other act relating to the revenue of customs, in any of his majesty's courts of record at Westminster, or in the courts of exchequer in Scotland, or in Dublin, or in the royal courts of Guernsey, Jersey, Alderney, Sark, or Man, shall and may be had, brought, sued, or exhibited, within three years next after the date of the offence committed; and shall and may be exhibited before any two or more justices of the peace, or governor, deputy-governor, or deemster in the Isle of Man, within six months next after the date of the offence committed.—§ 78.

*Of persons detained for smuggling offences.*—It shall be lawful for any two or more justices of the peace, or governor, deputy-governor, or deemster as aforesaid, before whom any person liable to be arrested and detained, and who shall have been arrested and detained, for being found or discovered to have been on board any vessel or boat liable to forfeiture under this or any other act relating to the revenue of customs, or for unshipping, carrying, conveying, or concealing, or aiding, or being concerned in unshipping, conveying or concealing any spirits or tobacco liable to forfeiture under this or any such act, shall be carried, on the confession of such person of such offence, or on proof thereof upon the oaths of one or more credible witness, or witnesses, to convict such person of any such offence; and every such person so convicted shall immediately upon such conviction pay into the hands of such justices, &c., for the use of his majesty, the penalty of £100, without any mitigation whatever, for any such offence of which he shall be so convicted; or in default thereof the justices, &c., shall by warrant commit such person to any gaol or prison, there to remain until such penalty be paid: provided that if the person convicted of any such offence be a seaman or seafaring man, and fit and able to serve his majesty in his naval service, and shall not prove that he is not a subject of his majesty, it shall be lawful for any such justices, &c., and they are hereby required, in lieu of such penalty, by warrant to order any officer of the army, navy, or marines, being duly authorised and on full pay, or officer of customs or excise, to convey, or cause to be conveyed, such person on board of any of his majesty's ships, in order to his serving his majesty in his naval service for the term of five years; and if such person shall at any time within that period by any means escape or desert from such custody or service he shall be liable at any time afterwards to be again arrested and detained by any officer of customs, or any other person, and delivered over as aforesaid to complete his service of five years; provided also, that if it be made to appear to any such justices, &c., that convenient arrangement cannot be made at the time of the conviction of the party, for immediately conveying such seaman or seafaring man, so convicted, on board any of his majesty's ships in order to serve his majesty, it shall be lawful for any such justices, &c., to commit any such seaman or seafaring man so convicted to any prison or gaol, there to remain in safe custody for any period not exceeding one month, in

order that time may be given to make arrangements for so conveying such seaman or seafaring man on board any of his majesty's ships as aforesaid; provided, also, that the commissioners of the treasury shall have full power to remit or mitigate any such penalty, punishment, or service, whether the parties be seafaring men or otherwise.—§ 80. If any person so convicted as a seaman or a seafaring man, and carried on board any of his majesty's ships of war, shall, on examination by any surgeon of his majesty's navy, within one week after being so carried on board, be deemed to be unfit, and be refused on that account to be received into his majesty's service, such person shall, as soon as convenient, be conveyed before any two or more justices of the peace, or any governor, deputy-governor, or deemster as aforesaid; and, upon proof that he has been refused to be received on board any of his majesty's ships as fit for his majesty's service, such justices, &c., shall call upon the person to pay the penalty of £100, without hearing any evidence other than such proof; and in default of immediate payment of the same into the hands of the justices, &c., for the use of his majesty, to commit the person to any gaol or prison, there to remain until such penalty be paid; provided, always, that no person so convicted, and ordered to serve on board any of his majesty's ships, shall be sent away from the United Kingdom on board of any such ship in a less time than one month from the date of such conviction.—§ 81.

*How persons arrested for certain offences may be detained.*—Where any person shall have been arrested and detained by any officer of the army, navy, or marines, being duly authorised and on full pay, or any officer of customs or excise, or any person acting in his aid, or duly employed for the prevention of smuggling, for any offence under this or any other act relating to the revenue of customs, and shall have been taken and carried before any two justices of the peace, to be dealt with according to law, if it appear to such justices that there is reasonable cause to detain such person, such justices may order such person to be detained a reasonable time, as well before as after any information has been exhibited against such party; and, at the expiration of such time, such justices may proceed finally to hear and determine the matter:—§ 83. If any goods be seized for non-payment of duties or any other cause of forfeiture, and any dispute shall arise whether the customs, excise, or inland duties have been paid for the same, or the same have been lawfully imported, or concerning the place whence such goods were brought, then the proof thereof shall lie on the owner or claimer of such goods, and not on the officer who shall seize and stop the same.—§ 102.

*The treasury and board of customs may restore seizures and mitigate penalties.*—It shall be lawful for the commissioners of his majesty's treasury of the United Kingdom of Great Britain and Ireland, or the commissioners of his majesty's customs, by any order made for that purpose under their hands, to direct any vessel, boat, or goods whatever, seized under any act relating to the revenue of customs, to be delivered to the pro-

prietors, whether condemnation shall have taken place or not, upon such terms as they may deem expedient, and which shall be mentioned in the order; and it shall be also lawful for the commissioners of the treasury, and the commissioners of customs, to mitigate or remit any penalty or fine which shall have been incurred, or any part of such penalty or fine incurred under any law relating to the customs, or to the trade and navigation of this kingdom: provided, always, that no person shall be entitled to the benefit of any order for delivery or mitigation, unless the terms expressed in the order are fully and effectually complied with.—6 Geo. IV. c. 108. § 44.

*By whom seizures may be made.—What forfeitures to include.*—All goods, and all ships, vessels and boats, which by this act or any act at any time in force relating to the customs shall be declared to be forfeited, shall and may be seized by any officer of customs; and such forfeiture of any ship, vessel, or boat, shall be deemed to include the guns, tackle, apparel, and furniture of the same; and such forfeiture of any goods shall be deemed to include the proper package in which the same are contained: provided always, that all goods, the importation of which is restricted, either on account of the packages or the place whence the same shall be brought, or otherwise, shall be deemed to be prohibited goods; and, if any such goods be imported into the United Kingdom other than to be legally deposited or warehoused for exportation, the same shall be forfeited.—6 Geo. IV. c. 107. § 128. In case any goods, ships, vessels, or boats, be seized, as forfeited, or detained as undervalued, by virtue of any act of parliament relating to the customs, it shall be lawful for the commissioners of customs to order the same to be restored, in such manner and on such terms and conditions as they shall think fit to direct; and, if the proprietor of the same accept the terms and conditions prescribed by the commissioners, he shall not have or maintain any action for recompence or damage on account of such seizure or detention, and the person making such seizure shall not proceed in any manner for condemnation.—§ 129.

*Remission of forfeitures and penalties.*—If any ship shall become liable to forfeiture on account of any goods laden therein or unladen therefrom, or if the master of any ship shall have become liable to any penalty on account of any goods laden in such ship or unladen therefrom, and such goods shall be small in quantity or of trifling value, and it shall be made appear, to the satisfaction of the commissioners of customs, that such goods had been laden or unladen contrary to the intention of the owners of such ship, or without the privity of the master thereof, as the case may be, it shall be lawful for the commissioners to remit such forfeiture, and also to remit or mitigate such penalty, as they shall see reason to acquit such master of all blame in respect of such offence, or more or less to attribute the commission of such offence to neglect of duty on his part as master of such ship; and every forfeiture and every penalty or part thereof so remitted shall be null and void, and no suit or action shall be brought or maintained by any person whatever on account thereof.—§ 130. In

case any information or suit shall be commenced or brought to trial on account of the seizure of any vessel, boat, or goods whatsoever, or any horses or other animals, or any carriage seized as forfeited by any act relating to the revenue of customs, wherein a verdict shall be found for the claimant thereof, and it shall appear to the judge or court before whom the same shall have been tried that there was a probable cause of seizure, such judge or court shall certify on the record that there was such probable cause, and in such case the claimant shall not be entitled to any costs of suit whatsoever, nor shall the person who made such seizure be liable to any action, indictment, or other suit or prosecution on account of such seizure; and in case any action, indictment, or other suit or prosecution shall be commenced and brought to trial against any person whatsoever, on account of any such seizure, wherein a verdict shall be given against the defendant, if the court or judge before whom such action, indictment, or prosecution shall be tried, shall have certified on the record that there was a probable cause for such seizure, then the plaintiff, besides the things seized, or the value thereof, shall not be entitled to above 2d. damages, nor to any costs of suit, nor shall the defendant in such prosecution be fined above 1s.—§ 92. If any action or suit shall be brought, as aforesaid, such action or suit shall be brought within six months next after the cause of action shall have arisen, and not afterwards.—§ 97.

*Of collusive seizures and bribes.*—If any officer of customs, or any officer of the army, navy, or marines, duly authorised and on full pay, and any other person whatsoever, employed under the direction of the commissioners of the customs, shall make any collusive seizure, or deliver up, or make any agreement to deliver up, or not to seize, any vessel or boat, or any goods liable to forfeiture, or shall take any bribe, gratuity, recompense, or reward for the neglect or non-performance of his duty, every such officer or other person shall forfeit for every such offence £500, and be rendered incapable of serving his majesty in any office whatever, either civil or military; and every person who shall give, or offer, or promise to give any bribe, recompense, or reward, or make any collusive agreement with any such officer, to induce him in any way to neglect his duty, or to do, conceal, or connive at any act, whereby any of the provisions of any act of parliament may be evaded, every such person shall, whether the offer be accepted or performed or not, forfeit £500.—6 Geo. IV. c. 108. § 35. All vessels and boats, and all goods whatsoever, which shall have been seized and condemned for breach of any law relating to the revenue of customs, shall be disposed of as soon as conveniently may be after the condemnation thereof, in the following manner: viz. all goods of a description admissible to duty shall be sold by public auction to the best bidder, at a price not less than the duty upon the importation of the like sort of goods; and, in case such goods will not fetch the duty, shall be put up to sale for exportation; and, in case they do not sell for exportation, then the goods shall be destroyed;

and all prohibited goods shall be put up for sale for exportation to the best bidder, and, in case they do not sell, then shall be destroyed; all vessels or boats calculated for the fair and mercantile trade of this kingdom shall be put up to sale to the best bidder; and all vessels or boats calculated for smuggling shall be broken up and destroyed, and the materials shall be put up to sale to the best bidder: provided that, if the commissioners of customs shall deem any of the vessels or boats necessary for the public service, it shall be lawful for them to cause the same to be used for the said purpose.—§ 62.

#### OF REWARDS.

The commissioners of customs are hereby authorised and empowered to award to any officer or other person detaining any person liable to detention, under any act relating to the revenue of customs, to be paid upon the conviction of such person, any reward they may think fit to direct, not exceeding £20 for each person.—6 Geo. IV. c. 108. § 63. And the commissioners of customs are authorised and empowered to pay the following reward to any officer or persons, as aforesaid, by whose means any pecuniary penalty or composition is recovered: viz. one-third of the penalty or sum recovered.—§ 64.

For actual seizures there shall be paid and allowed for a seizure by any officer of the army, navy, or marines, duly authorised and on full pay, or any officer of the customs or excise, or other person deputed or employed by the commissioners of customs or excise, under any act relating to the revenue of customs, the following rewards: viz.

#### Seizures of Spirits and Tobacco.

If all the parties be detained, and carried before two justices of the peace, the whole.

If two or more, not being the whole, be detained and convicted, seven-eighths.

If one, being a seafaring man and convicted, three-fourths.

If one be detained with the vessel, or means of conveyance, three-fourths.

If one person be detained and convicted, not a seafaring man, five-eighths.

If vessel or carriage with its lading be seized, without any person being detained, one-third.

If goods found sunk and concealed, and the smuggler afterwards convicted in consequence thereof, and by the exertions of the individuals so finding them, one-half.

If goods found, and no person subsequently convicted, one-eighth.

If goods seized, and parties subsequently convicted in consequence of such seizure, and by the exertion of the seizers, one-half.

If goods seized only, one-eighth, or such other part as the commissioners of customs shall think proper, not exceeding one-fourth.

#### Seizures of Goods Prohibited to be Imported.

If vessel after importation or other means of conveyance seized, or any person prosecuted to conviction on account of same, two-thirds.

If goods only, one-half.

*Seizures of Goods not before enumerated.*

If vessel, or other means of conveyance, seized, or any person prosecuted to conviction on account of the same, one-half.

If goods only, one-fourth.

*Goods Destroyed.*

If vessel, or other means of conveyance, seized, or any person prosecuted to conviction on account of the same, a moiety of the appraised value or amount of duty.

If goods only, one-fourth of appraised value or amount of duty.

*Seizures of Vessels and Boats.*

If sold, a moiety of the produce.

If taken into the public service, or broken up, a moiety of appraised value.

*Seizures of Cattle and Carriages.*

In all cases three-fourths of the produce of the sale.

All the aforesaid rewards being subject to a deduction of £10 per cent., on account of law charges and other expenses.—§ 66.

*Rewards may be apportioned in special cases.—*

The commissioners of customs or excise are hereby authorised, in case of any seizure of vessels, boats, or goods, or the apprehension of any parties under any act relating to the revenue of customs, to direct the distribution of the seizer's share of such vessels, boats, or goods, or of any penalties or rewards, so as to enable any officers, or persons acting under the authority of the commissioners respectively, or through whose information or means such seizure shall have been made, or penalty recovered, or party apprehended, who shall not have been actually present at the making of the same, to participate in such proportions as the commissioners shall respectively deem expedient.—§ 68. And upon proof being made, to the satisfaction of the commissioners of customs or excise, that any officer or person, as aforesaid, shall have acted collusively or negligently in the making of any seizure, it shall be lawful for the commissioners to direct that the whole, or any part of the proportion of such seizure, be applied to the use of his majesty.—§ 69.

If any person shall discover any spirits, being in casks of less content than forty gallons, which may be found floating upon or sunk in the sea, and shall give information to any officer of customs or other person duly authorised to make seizure of such spirits, so that seizure be made of the same, the person giving such information shall also be entitled to and shall receive such reward as the commissioners of customs may deem it expedient to direct.—§ 71. For the necessary subsistence of any poor person confined in the United Kingdom, or in the Isle of Man, under any exchequer or other process for the recovery of any duties or penalties, either upon bond or otherwise, under any act relating to the revenue of customs or excise, sued for by virtue of any order of the commissioners of customs or excise, it shall be lawful for the commissioners of customs or excise to cause an allowance, not exceeding the sum of 7½d., and not less than 4½d., a day, to be made to any such

person, out of any money in their hands arising from the duties of customs or excise, as the case may require.

**SMUM**, one of the many names given to the pestilential wind of Arabia and Egypt. See **ARABIA**, **SAMIEL**, and **SIMOOM**; of which last **Smum** is evidently a contraction.

**SMUT**, *n.s., v.a. & v.n.* { *Sax. smitta; Belg. SMUTCH, v.a.* } *smette.* A spot made; *SMUT'INESS, n.s.* { *with soot or coal; a SMUT'TY, adj.* } *sooty must or blackness gathered on corn; mildew: to stain or mark with smut; mildew: to gather must: smutch is to black with smoke: smuttiness and smutty correspond with smut, noun substantive.*

Mildew falleth upon corn and smutteth it. *Bacon.*

Have you seen but a bright lily grow,  
Before rude hands have touched it?  
Ha' you marked but the fall o' the snow,  
Before the soil hath smutched it?

*Ben Jonson's Underwoods.*

The smutty grain,  
With sudden blaze diffused, inflames the air.

*Milton.*

He is far from being smutted with the soil of atheism.

*More.*

My vines and peaches, upon my best south walls,  
were apt to a soot or smuttiness upon their leaves and  
upon their fruits, which were good for nothing.

*Temple.*

A fuller had invitation from a collier to live with him: he gave him a thousand thanks; but, says he, as fast as I make any thing clean, you'll be smutting it again.

*L'Estrange.*

Smutty corn will sell dearer at one time than the clean at another.

*Locke.*

Farmers have suffered by smutty wheat, when such will not sell for above five shillings a bushel; whereas that which is free from smut will sell for ten.

*Mortimer's Husbandry.*

White red-eared wheat is good for clays, and bears a very good crop, and seldom smuts. *Mortimer.*

The inside is so smutted with dust and smoke that neither the marble, silver, nor brass works shew themselves.

*Addison.*

The place is a censure of a profane and smutty passage in the Old Bachelor.

*Collier.*

He was a smutty dog yesterday, and cost me near two hours to wash the ink off his face. *Pope.*

The smutty wainscot full of cracks. *Swift.*

**SMUT, IN WHEAT.** A variety of facts and reflections have been offered on this subject by Mr. R. Somerville, in the second volume of *Communications to the Board of Agriculture*; who begins by remarking that, some years ago, he collected a quantity of smutted ears from one field of wheat, in which they were very numerous, and a number of healthy well-filled ears from another field, in which there was no smut. The grains were rubbed out of both, intimately mixed, and kept in a box for two months, at the end of which time they were rubbed between the hands in such a manner as to break the whole of the smut-ball. The parcel was then divided into two equal parts, one of which was three or four times washed with pure water, and well rubbed between the hands at each washing, and afterwards sown in a drill in his garden; the other half was sown in another drill without any washing or preparation whatever, the soil and every other circumstance being equal. Both

parcels vegetated at the same time, and for about two months thereafter there was no visible difference in their appearance; about that period, however, he observed that many of the plants in the drill that had been sown without being washed were of a darker color than the others; these, when narrowly examined, were of a dirty-green. The plants in the drill that had been washed were all of one color, and seemingly healthy; as the season advanced, the difference in color became more striking, and continued to increase till the grain was fairly out of the blade: about this time many of the dirty-green ears began to exhibit symptoms of decay. As soon as the ear was fairly shot out, the whole of those in the unwashed drill, that had the dirty-green appearance above described, were found to contain nothing but smut; and these smutted ears were in the proportion of more than six to one of the healthy ones; while, on the contrary, the drill in which the washed grains had been sown, and which consisted of several hundred grains, had hardly a smutted or unhealthy ear in it. The same experiment was repeated the following season, and with nearly the same result. Satisfied with knowing that complete washing would be found a remedy for the disease, he made no farther enquiry upon the subject till last autumn, when he was employed in making observations upon the blight, in the course of which he met with a good deal of smut in many fields; and, being at the time possessed of some excellent glasses, he carefully examined some of the smutted plants. This at first was done more as a matter of amusement than from any expectation of discovering any thing that might contribute to throw light upon the subject. Upon a near inspection with the glass, he found that the dirty-green color of the blades of the smutted ears was owing to a number of spots infinitely small, and bearing a near resemblance to those upon blighted ears: his observations were continued throughout the whole period of the ripening, in the course of which he made no additional discovery, except observing that the leaves and stalks of the smutted ears decayed sooner than such as were healthy. About the end of autumn, however, having one day brought home some smutted ears of rather an unusual appearance, he examined them very narrowly, and observed that the balls were perforated in many places with small round holes, a thing he had not before observed in any that he had met with: this he ascribed to vermin; and upon sticking one of the grains upon a pin, and placing it under the glass in a very bright sun, he could distinctly observe several small transparent specks upon the beard, or downy part of it. He examined several more, and met with exactly the same appearance; but, upon being called hastily away upon business, he was under the necessity of leaving them upon the table, without being able to ascertain whether the objects he had seen were eggs or insects. In the evening, when he came home, he resumed the investigation by candle-light; in the course of which, as he was under the necessity of holding them very near the candle, the heat soon relieved him from his embarrassment, by putting them in motion, and he

then discovered that the specks above-mentioned were real insects, resembling wood-lice in shape. Next day he repeated the same trials by sunlight with new smut-balls, and discovered the same appearances, but without being able to make any of the insects stir. Disappointed and vexed at not being able to see them in motion with the sun-light, and recollecting the heat of the candle, he threw the concentrated rays of the sun upon them with a burning-glass, which completely answered his purpose of putting them in motion, and showing them in every different point of view. To describe minutely an insect so small as not to be distinguishable by the naked eye, would, he thinks, be no easy matter; it is sufficient to say that its general appearance is very similar to the wood-louse, though infinitely smaller. As soon as he had clearly ascertained the existence of this insect, his mind was perfectly at ease with regard to the cause of the distemper; but though he could very readily conceive that vermin, in the early stages of the growth of a plant, might so injure the stamina as to render it unfit to produce any thing but smut, he could not so well understand how it was possible for the mere touch of the black earth contained in the smut-balls to produce the same effect. It is well known that, in the animal body, certain infections are communicated merely by the contact of the sound and unsound parts; but that in every instance where this happens the injury can be distinctly traced to an absorption of the virulent matter, by the vessels of the healthy subject.

We are now, he thinks, so well acquainted with vegetation as to know that plants have a circulating system as well as animals; and that, while they are in a growing state, poison as well as nourishment may enter their vessels, and do infinite mischief. If this reasoning is sanctioned by experience, and there can be no doubt of it, and if there is the slightest analogy between animal and vegetable life, it will at once appear, that no bad effect could possibly arise from smutted and healthy ears coming in contact, either in the stack or the barn, as at that time they are in a state of rest, and no circulation going on. It may be argued, in answer to this, that while the plants are green, the shaking of the wind may bring the smutted and the healthy ears into contact, and that the acrimony of the smut may corrode and destroy the healthy wheat, so as to produce the disease. This idea he knows is entertained by many very good farmers: it is, however, clearly disproved by the experiment above recited, by which it appears that a simple washing in water, provided it is properly performed, is a very effectual cure for the distemper: common sense will inform us that had the stamina, or germ of the grains so washed, been injured by any thing of a corrosive nature, even in the slightest degree, no ablution whatever could possibly have repaired the mischief. And the same reasoning, he supposes, applies with equal justice to the other causes assigned, with the single exception of insects; for, if either the grain was naturally weak, or had been sprung in harvest, or was deficient in its male organs, as is ridiculously supposed, nothing

but the highest degree of weakness and credulity could make any person believe that either the washing with water, or indeed any other preparation, could cure such defects.

It is, therefore, his opinion, that the smut is occasioned by the small insect above described, as seen by the glass in the downy part of the grain; and that when the balls are either broken in the operation of thrashing, or come in contact with clean healthy grains, the insects leave the smutted grains, and, adhering to such as are healthy, are sown with them, and wound the tender stem in such a manner as to render the plant incapable of producing any thing but smut. It is not an easy matter to account for the manner in which this takes place; but a little attention to the circumstances he is now to mention will perhaps throw some light upon it. It is known that plants of very opposite natures and qualities will grow and produce abundantly upon the same soil, where the nourishment is seemingly the same. This effect is also known to be owing to the structure of their vessels, by the action of which the juices that circulate through them are differently prepared in every different plant. From this striking difference, owing confessedly to organisation, is it not, i.e. asks, presumable that the smut in wheat is produced by the insects wounding the vessels of the plant in such a manner as to render them incapable of taking up any other principle from the soil, but the smut contained in the balls, which, upon examination, seems to have no quality different from the finest vegetable earth? This opinion, he thinks, is strongly supported from the circumstance of certain pickles being found a cure for the malady. The effect of these pickles is, however, completely misunderstood; for in place of supposing, as is erroneously done, that they operate by strengthening the grain, and thereby removing that debility which has been long considered the cause of smut, their benefit

depends upon the powers they possess of destroying the insects above described: but to show the absurdity of the commonly received opinion in a more striking point of view, it is only necessary, he adds, to state, that many of these preparations, which are supposed to be so friendly to vegetation, are in fact inimical to it, unless they are used with the utmost caution; even stale urine, which has long been considered as a safe and innocent remedy, is, under certain circumstances, highly pernicious. After he had discovered the insect, he made trial of all the substances commonly used, and found all of them, when properly applied, destructive to it. Is it not, therefore, he contends, more agreeable to plain common sense to suppose that the virtue of these preparations consists more in the power they have of destroying vermin, than in any strengthening quality they possess?

The general practice of farmers has been that of preparing their seed by the means of some sort of washing or brining. The following is a table view of the results of trials made with different steeps, in order to ascertain their utility as well as in promoting the growth of the grain, as given by Mr. Bevan, in the ninth volume of the Agricultural Magazine. It contains twelve samples of smutty wheat, and the same number of sound good wheat, steeped in twelve different solutions of the most common acids and alkalies, and salts, most readily procured. The wheat was sown at Leighton, Bedfordshire, on a sandy soil. The solutions were all made cold, and the samples continued about twenty-four hours in steep. The columns marked A are the results from the good wheat, and those marked B are from the smutty samples. It may be observed that neither of the samples steeped in the solutions of nitric acid came up, excepting a single corn in the good sample, and which produced above 1200 ears from it.

Kinds of substances used.	Specific gravity of the solution.	Number of smutty ears in three sheaves.		Bushels of good wheat, per acre.		Cwts. of straw, per acre.	
		A.	B.	A.	B.	A.	B.
1. Solution of potash . . . . .	1.357	1	81	21.6	13.6	36.6	29.1
2. —— of muriate of potash . .	1.097	3	218	20.2	10.1	36.0	21.1
3. —— of nitrate of potash . .	1.080	7	115	23.8	14.3	36.9	31.9
4. —— of soda . . . . .	1.056	9	159	20.2	11.7	35.6	26.7
5. —— of muriate of soda . .	1.089	—	290	24.0	14.5	41.5	33.3
6. —— of sulphate of soda . .	1.047	12	241	21.6	12.3	38.5	27.8
7. —— of muriate of ammonia .	1.026	1	150	19.8	17.6	35.4	30.2
8. —— of common soot . . . .	1.025	—	123	20.8	11.4	34.8	25.3
9. —— of lime saturated . . . .	1.003	—	2	21.9	12.4	38.7	25.9
10. —— of nitric acid . . . . .	1.016	—	—	—	—	—	—
11. —— of muriatic acid . . . .	1.011	—	136	20.7	16.1	35.7	34.1
12. —— of sulphuric acid . . . .	1.050	—	—	20.4	17.8	35.4	37.1
13. Dry in its natural state . . .	—	6	323	20.3	14.7	35.7	31.1
14. Washed in common water . . .	—	None sown	107	—	18.3	—	35.8

But M. de Lignerolle contends that the surest means of avoiding smut, and that which he has long practised with success on upwards of 300 acres of land, is to change the seed every year,

to be very careful that the seed-corn be well dried and thoroughly ripe, and that it be not smutty, nor have any smutty powder sticking to it. He then pours boiling water on quick-lime, in a

large tub; and, after the ebullition is over, as much cold water as there was hot, and stirs it all strongly together, in order to dissolve and thoroughly mix the lime. The quantity of wheat intended to be sowed is sprinkled with this ley, and then well stirred with a shovel, and laid in as high a heap as possible. It is best, he supposes, to keep the grain for a week after this preparation, turning it every day; for otherwise it would heat so as to destroy the germ. By these means he has not had any smut, when the fields around him have been infected with that distemper. And Mr. Donat, near Rochelle, has used the following with success: take quick-lime and pigeons'-dung, of each twenty-five pounds, forty pounds of wood-ashes, and twenty-five pounds of sea-salt, or salt-petre. Put all these into a tub, large enough to hold half a hogs-head of common water, which should be added to them. Stir them all well with a stick, till the lime is quite dissolved. This ley will keep some time without spoiling. It must be stirred just before the corn is steeped in it. The grain is then put into a basket, and plunged into the ley, where it remains till it has thoroughly imbibed it; after which it is taken out, and laid in a heap till it is quite drained of all its moisture: or, which is a still better way, take a mashing-tub, fill it with grain to within four inches of the brim, and then pour in the ley well stirred before-hand. When the tub is full, let the ley run out at the bottom into some other vessel, in order to use it again for more corn. Let the grain be then taken out and laid in a heap to drain; and continue in this manner to steep all the seed-corn. The wheat, thus prepared, may be sowed the next day, and must not be kept above five or six days, for fear of its heating. This quantity of ley will serve to prepare more than twenty bushels of wheat. Mr. Tull has also long since observed that brining and changing the seed are the general remedies for smut.

An intelligent writer, in the eleventh volume of the Agricultural Magazine, says that he can truly state that, in the course of long and extensive practice, he has never discovered the produce of any good and properly prepared seed-wheat smutted, while that of his unprepared escaped. On the contrary, whenever he has sown any in the latter state, he has always observed much smut in the crops raised from it; and refers his readers to the following account of an accurate comparative statement. On the 15th of March last he sowed two contiguous ridges (in the middle of a very large field), equal in soil, condition, and exposure, with wheat of the same variety, raised on the same kind of soil, in precisely the same mode of management, and thoroughly mixed. The seed contained a very small quantity of smut, perhaps one black ball to a quart; but the other grains were not at all discolored. The ridges were set out in an east and west direction, each eighty yards long and nine broad. On the west half of the northern ridge he sowed the seed without any preparation whatever; and on the east, after being well washed in clean river water. On the west half of the other ridge the wheat was sown after

having been wet with old chamber-ley; and on the east half, after being prepared (provincially pickled) in the usual manner, with old chamber-ley and lime in fine powder. All the land was ploughed and sown broad-cast on the same day, without any variation of weather, and equally well harrowed. We had a calm, dry, and tolerably warm blooming season. Some time after the ears were out he examined the crop very minutely. That after the unprepared seed, the washed seed, and the wheat wet with chamber-ley, contained a great, and that from the seed which received the chamber-ley and lime, a very small quantity of smut. The straw of this appeared as good as that of the sound wheat. Upon every piece of ground he found ears partly smutted and partly sound. In part of these ears he found some rows of grain containing sound wheat near the middle of the row, and smut both above and below it. With a view of finding the proportion (at harvest) with some degree of precision, he took four sheaves from the middle of the crop raised from the pickled seed, mixed them thoroughly, reduced them to an equal size, viz. to the circumference of twenty-four inches, and then carefully picked out and counted the number of smutted ears they contained. He pursued precisely the same mode with the crops upon the other pieces of ground, and the results were as under:

#### Smutted Ears.

The four sheaves after the pickled seed contained . . . . .	165
The four sheaves from the seed which was washed in clean water . . . . .	1212
The four sheaves from the seed wet with chamber-ley . . . . .	723
The four sheaves from the seed which received no washing or preparation . . . . .	1270

It is supposed that it is stated, in some of our agricultural publications, that one of the strong acids, much diluted with water, has been successfully used in preparing seed-wheat, with a view of preventing smut; a disease which has been improperly confounded with blight or mildew. The latter remedy he never tried; he has, however, on several occasions, used sea-water (so strongly impregnated with salt that an egg would swim on it) and lime, and also the drainings of fold-yards and lime, and is of opinion that these mixtures are not nearly so efficacious as the latter article and strong chamber-ley. The best mode of preparation is, he thinks, to immerse the wheat in the chamber-ley, stirring it well (about five or ten minutes), and skimming off the light grains, &c. The chamber-ley should be let out by a tap, and the wheat spread on a floor, and so well mixed with the lime that every grain may receive a part of it. If this mode be carefully practised, with seed free from smut, he can, from experience, assure the husbandman that he will never suffer, in any considerable degree, from that disease. As the lime and chamber-ley will soon destroy the vegetative principle of the grain, if it be suffered to remain in a heap, or in bags, it should be committed to the ground within six or eight hours after it has been thus prepared. He has sometimes known

it considerably injured after being kept twenty-four hours thinly spread out upon a well aired floor. And as, when the seed is in a very moist state, it will not pass regularly through the drill-machine, it is necessary on that account to have it drier in the drill than the broad-cast husbandry. When the wheat used in the foregoing experiment was prepared, a proper vessel was not at hand, and therefore the chamber-ley was sprinkled upon it. This, however, is not a good method, for we lose the chamber-ley, and the advantage of skimming off the light grains, black balls, &c.; and, notwithstanding frequent turnings, it sometimes happens that all the grains do not receive a sufficient quantity of the liquid. A proper vessel should therefore be constantly had recourse to for this purpose.

On the supposition of this diseased state of grain being produced by an insect, the following method of kiln-drying has been proposed in the third volume of the Farmer's Magazine. Let the wheat be laid upon the kiln about three or four inches thick, the kiln being heated middlingly strong with blind coal; the wheat to continue on the kiln for twenty-four hours, but turned frequently. After taking it off the kiln, it must be allowed twenty-four hours to cool, during which time it must be frequently turned, and then put through the fanners once or twice. After the wheat has lain a few hours on the kiln, and the fire begins to have effect, a great number of very small worms, formerly undiscovered by the eye, appear on the top of the grain, and are soon destroyed by the heat. These come from blacked wheat or other corns that could not be suspected to be indifferent; or may lie in, or on good wheat, which worms continuing (when not thus killed) might consume the corn after it is thrown into the earth, thereby checking the growth entirely, or preventing it from having the strength it otherwise would have, to bring forth a strong productive stalk. It is added that the first farmer in Clackmannanshire who tried the kiln-drying of wheat, instead of pickling it, learnt it about twenty-five years ago (and he has continued the practice ever since) from an Irishman, who had been appointed by the Board of Trustees to stamp the linens, &c., manufactured in the village of Alva, who asserted that it was practised in his part of Ireland; but, at this distance of time, the farmer has forgotten what part of Ireland the man said he came from.

With the view of cleaning smutty grain, various methods have been proposed; as by agitating it with different substances, as sand, and lime made from stone, or white or gray chalk, which, when used, should be finely sifted, and then well blended with the wheat in proportion to the state of the smut, as from one to two bushels for a load of five quarters, which should then be passed through machine one or more times, according to the purpose for which the wheat is intended. And, for common purposes, it is supposed that the smut in wheat may be removed by a machine with brushes, invented for the purpose; but that, if it be for seed, it should be put in a trough, or wicker receiver, under the spout of a pump, or the fall of a stream, and be briskly stirred about, until the injurious

substance floats away, or can be skimmed off from the surface. When intended for flour, after this washing, it must be dried on a malt-kiln for the space of eighteen hours, but heated so as not to exceed  $85^{\circ}$  of Fahrenheit's thermometer. There is a representation of a machine contrived for this use in the Corrected Agricultural Report of Berkshire.

SMUT, or Blacks, in oats, is a vegetable disease that often occurs or takes place in crops of this kind, in much the same manner as that of smut in wheat. It sometimes affects the whole of the ear of the grain, being met with in different stages of its progress in the standing crops, as well as at the time of thrashing out the corn, as in those of a soft unctuous state, in the state of a ball, and in a powdery state, or that of a fine dust, which disperses itself in thrashing, and fixes upon different parts of the faces of the men who thrash, rendering them quite black. Others, probably without sufficient observation or knowledge of the fact, suppose it to be a plant growing separately among the oats. It is an affection of this sort which happens frequently on the eastern side of the county of Lancaster and in the Isle of Man.

No effectual method of preventing it has yet been discovered, but it is found to be much lessened by the good cultivation and management of the land on which this crop is grown. The oat crops, where it exists to any considerable extent, are much less productive than in other circumstances; but the diseased substance is generally light in its nature, so that it is readily blown away in dressing or cleaning.

SMYRNA, a large commercial city of Asia Minor, situated at the head of a long and winding gulf of the Grecian archipelago. Smyrna claims, on pretty strong grounds, to be the birthplace of Homer, and is said originally to have been a colony from Ephesus, that soon attained to such a degree of prosperity as to be received as the thirteenth city of Ionia. The original city, however, was destroyed by the Lydians; and the population were dispersed in the neighbouring villages, till Antigonus and Lysimachus rebuilt it on a different spot. The streets were now beautifully laid out, paved, and adorned with porticos; and the city contained a gymnasium, a library, and a structure called the Homerium, consisting of a temple, statue, and portico, dedicated to Homer.

Smyrna has ever since continued a flourishing place, and in modern times has been considered the emporium of the Levant. The town is at present about four miles in circuit, extending about a mile along the water, in approaching from which it makes a fine appearance. The bay is land-locked, so that nothing is seen from the town but the projecting points. The streets, however, are narrow, dirty, and ill paved; and the bazaars, though well provided with goods, are by no means respectable structures. There are two very fine caravanseras enclosing square courts, and covered with cupolas; the besestains, or shops, also are here arched over and very fine. At the east end of the city is a large hill, about three-quarters of a mile in circumference, on which was the castle constructed by the Genoese.

Along its circuit may be traced the remains of a very thick and strong wall, and corresponding in its dimensions with another, which appears to have surrounded the city. Of the sumptuous ancient edifices scarcely any remains can be traced. Only the foundations can be seen of the splendid theatre built on the slope of the hill, the site of which is now covered with houses; and on a gateway belonging to the castle is a colossal statue of very fine workmanship, though much mutilated, which has been supposed to be that of the Amazon Smyrna. Marks of a very extensive aqueduct may also be traced, though a late traveller doubts if it be of high antiquity. Behind the city is an extensive and most luxuriant plain, watered by the river Meles, which is here from fifty to 100 yards broad, but contains little water. The chief inconvenience of Smyrna is its being extremely liable to earthquakes, which from time to time cause great alarm. A heavier calamity is the plague, which, in 1814, carried off from 50,000 to 60,000 souls. The inhabitants are usually reckoned at 100,000, of whom Mr. Turner supposes the Turks to amount to between 50,000 and 60,000, the Greeks to 30,000, the Armenians to 8000, and the Franks, or Europeans, to 2000 or 3000. The export trade consists of Turkey carpets, raw silk, unwrought cotton, and the beautiful goats' hair, or mohair, of Angora. It sends out also a considerable quantity of raisins, muscadine wine, and a variety of drugs, as rhubarb, amber, musk, lapis lazuli, and gums; also a number of pearls, diamonds, and other precious stones. The imports are lead, tin, glass, woollen cloths, and wrought silks.

**SMYRNIUM**, Alexanders, a genus of the digynia order, and pentandria class of plants; natural order forty-fifth, umbellatae. The fruit is oblong and striated; the petals have a sharp point, and are keel-shaped. There are five species:—1. S. *Egyptiacum*, the Egyptian Alexanders, a native of Egypt. 2. S. *aureum*, the golden Alexanders, a native of North America. 3. S. *integerimum*, the complete Alexanders. 4. S. *olusatum*, common Alexanders, a native of Britain; the leaves of which are cauline, ternate, petiolated, and serrated. It grows on the sea coast at Dunglas on the borders of Berwickshire, North Britain. Since the introduction of celery into the garden the Alexanders is almost forgotten. It was formerly cultivated for salading, and the young shoots or stalks blanched were eaten either raw or stewed. The leaves too were boiled in broths and soups. It is a warm comfortable plant to a cold weak stomach, and was in much esteem among the monks, as may be inferred by its still being found in great plenty by old abbey walls. 5. S. *perfoliatum*, the perfoliate Alexanders, a native of Candia in Italy.

**SMYTH** (Robert), an indefatigable English antiquary, educated at St. John's College, Cambridge, under Dr. Newcombe the master of it. He made large collections for a History of the Sheriffs of England; but when ready for the press it was unfortunately lost. He assisted Mr. Carter, schoolmaster at Cambridge, in his History of that city and university.

**SNACK**, *n. s.* From *snatch*. A share; a part taken by compact.

If the master gets the better on't, they come in for their *snack*. *L'Estrange.*

For four times talking, if one piece thou take,  
That must be cantled, and the judge go *snack*.

*Dryden.*

All my domurs but double his attacks;  
At last he whispers, 'Do, and we go *snacks*.' *Pope.*

**SNAFFLE**, *n. s. & v. a.* Belg. *snavel*, the nose. A bridle which crosses the nose: to bridle; hold in a bridle; manage.

The third o' the' world is yours, which with a  
*snaffle*

You may pace easy; but not such a wife.

*Shakspeare.*

Sooth him with praise;  
This, from his weaning, let him well be taught,  
And then betimes in a soft *snaffle* wrought.

*Dryden's Georgicks.*

**SNAG**, *n. s.* } From Dan. *knag*, a knot,  
**SNAGGED** *adj.* } probably. A jag, or sharp  
**SNAGGY** *adj.* } protuberance: the adjectives corresponding.

The one her other leg had lame,  
Which with a staff, all full of little *snags*,  
She did disport; and Impotence her name.

*Faerie Queene.*

His stalking steps are stayed  
Upon a *snaggy* oak, which he had torn  
Out of his mother's bowels, and it made  
His mortal mace, wherewith his foemen he dismayed.

*Spenser.*

Naked men belabouring one another with *snagged* sticks, or dully falling together by the ears at fisty-cuffs.

*More.*

The coat of arms,  
Now on a naked *snag* in triumph borne,  
Was hung on high. *Dryden's Aeneid.*

In China none hold women sweet,  
Except their *snags* are black as jet. *Prior.*

**SNAIL**, *n. s.* Sax. *fnegl*; Belg. *snegl*; Goth. *snigill*. A slimy animal which creeps on plants; the emblem of slowness.

I can tell why a *snail* has a house.—Why?  
Why, to put's head in; not to give it away to his daughters, and leave his horns without a case.

*Shakspeare. King Lear.*

Fearful commenting  
Is leaden servitor to dull delay;  
Delay leads impotent and *snail*-paced beggary.

*Shakspeare.*

Why protest thou to thyself, and answerest not?  
Dromio, thou drone, thou *snail*, thou slug, thou sot!

*Id.*

Seeing the *snail*, which every where doth roam,  
Carrying his own house still, still is at home,  
Follow, for he is easy-paced, this *snail*;  
Be thine own palace, or the world's thy gaol.

*Donne.*

There may be as many ranks of beings in the invisible world superior to us, as we ourselves are superior to all the ranks of beings beneath us in this visible world, even though we descend below the *snail* and the oyster.

*Watts.*

**SNAIL**. We find this word twice in our translation of the Bible. The first is the rendering of the Hebrew word שׁנֵל, chomet, Levit. xi. 30, where a kind of lizard is spoken of; the other is Psal. lviii. 8, שׁבְלִיל, sabelul, which the Sep-

*tuagint* and *Vulgata* render *wax*; but which Bochart has amply demonstrated, from the most ancient Jewish writers, to be the snail. Parkhurst is of opinion that the name may be deduced from the peculiar manner in which snails thrust themselves forward in moving, and from the force with which they adhere to any substance on which they light. The wise Author of nature, not having furnished them with feet and claws to creep and climb, has compensated them in a way more commodious for their state of life, by the broad thin skin along each side of the belly, and the undulating motion observable there: by the latter they creep; by the former, assisted by the glutinous slime emitted from their body, they adhere firmly and securely to all kinds of superficies, partly by the tenacity of their slime and partly by the pressure of the atmosphere. Thus the snail appears to waste itself by its own motion, every undulation leaving something of its moisture behind; and in the same manner the actions of wicked men prove their destruction. They may, like the snail, carry their defence along with them, and retire into it on every appearance of danger; they may confidently trust their own resources, and banish away the fear of evil; but the principles of ruin are at work within them, and, although the progress may be slow, the result is certain.

The dissection of this animal is curious; for by this means the microscope not only discovers the heart beating just against the round hole near the neck, which seems the place of respiration, but also the liver, spleen, stomach, and intestines, with the veins, arteries, mouth, and teeth, are plainly observable; the guts of this creature are green, from its eating of herbs, and are branched all over with fine capillary white veins; the mouth is like a hare's or rabbit's, with four or six needle-teeth, resembling those of leeches, and of a substance like horn. Snails are said to couple three times at the distance of about fifteen days from each other, nature producing a new spear for each time of copulation, which lasts ten or twelve hours; at the end of about eighteen days they bring forth their eggs, by the aperture of their neck.

Even this small animal is not free from the plague of supporting other smaller ones on its body; and as in other animals we find these secondary ones either living only on the surface, as lice, &c., or only in the intestines, as worms; it is very remarkable that this creature infests the snail in both these manners, being found sometimes on the surface of its body; and sometimes in its intestines. On the collar of the common garden snail, or the only part that is visible when the animal is retired into its shell, the insects, which infest it, are usually seen in considerable numbers, marching about very nimbly.

Snails are great destroyers of fruit, especially the better sorts of wall-fruit. Lime and ashes, sprinkled on the ground where they resort, will drive them away, and destroy the young brood: it is a common practice to pull off the fruit they have bitten, but this should never be done, for they will eat no other till they have wholly eaten up this, if it be left.

Aristotle and the older Greek philosophers had

no idea of the generation of these insects, but supposed them produced spontaneously; the Romans however show, by many passages in their writings, that they got over this error; and even seem, by the preference they gave to the neck of this animal to have understood its hermaphrodite structure.

SNAKE, *n. s.* { Saxon *gnaca*; Belg. *snake*;

SNAKY, *adj.* { Sansc. *snag*. A serpent of the oviparous kind; in poetry it is a general name for a serpent: snaky is resembling or having the qualities of a snake.

Venomous tongue, tipped with vile adder's sting,  
Of that self kind with which the furies fell

Their *snaky* heads do comb. Spenser.

In his hand

He took caduceus, his *snaky* wand.

*Huberd's Tale.*

Glos'ter's shew beguiles him;  
As the *snake*, rolled in a flowery bank,  
With shining checkered slough, doth sting a child,  
That for the beauty thinks it excellent.

*Shakspeare, Henry VI.*

We have scotched the *snake*, not killed it:  
She'll close, and be herself; whilst our poor malice  
Remains in danger of her former teeth.

*Id. Macbeth.*

The crooked arms Meander bowed with his so  
*snaky* flood,  
Resigned for conduct the choice youth of all their  
mortal brood. Chapman.

Look, look unto this *snaky* rod,  
And stop your ears against the charming god.

*Ben Jonson.*

So to the coast of Jordan he directs  
His easy steps, girded with *snaky* wiles.

*Milton's Paradise Regained.*

The true lover's knot had its original from nodus  
Herculanus, or Hercules's knot, resembling the  
*snaky* complication in the caduceus, or rod of Hermes.

*Browne's Vulgar Errors.*

The parts must have their outlines in waves, resembling the gliding of a *snake* upon the ground.  
they must be smooth and even.

*Dryden's Dufresnoy.*

Nor chalk, nor crumbling stones, the food of  
*snakes*,  
That work in hollow earth their winding tracks.

*Dryden.*

His flying hat was fastened on his head;  
Wings on his heels were hung, and in his hand  
He holds the virtue of the *snaky* wand. Id.

We have *snakes* in our cups, and in our dishes;  
and whoever dips too deep will find death in the pot.  
*L'Estrange.*

SNAKE, in zoology. See ANGUIS, and SERPENS. When the snake is killed it must first be washed clean, and freed from all filth; then it is to be put into a glass of a proper size, the tail first, and afterwards the rest of the body, winding it in spiral ascending circles, and disposing the back, which is always the most beautiful, outwardly. A thread, connected with a small glass bead, is, by the help of a needle, to be passed through the upper jaw from within outwardly, and then through the cork of the bottle, where it must be fastened; by this means the head will be drawn into a natural posture, and the mouth kept open by the bead, whereby the teeth, &c., will be discovered: the glass is then to be filled with rum, and the cork sealed

down to prevent its exhalation. A label, containing the name and properties of the snake, is then to be affixed to the wax over the cork; and in this manner the snake will make a beautiful appearance, and may be preserved a great number of years; nor will the spirits impair or change the lustre of its colors.

**SNAKEROOT**, *serpentaria*. The ancients were acquainted with but two kinds of serpentaria, the great and the small. The serpentaria Virginiana and that of Candia and Brasil, have been added since the discovery of America. The herb dragon is also called, by some writers, the great serpentaria; by the ancients, *dracunculus major*. It has its stem very straight, smooth, and marked with red spots, like the skin of a serpent; whence, probably, as much as from its virtues, it is that it takes its name. Its root is big, round, and white, covered with a thin skin. The smaller serpentaria, of this kind, has its stalk much like that of the larger, only its leaves are like those of ivy, whereas those of the larger are digitated, after the manner of bastard hellebore. Its root is round and bulbous.

The serpentaria Virginiana, *columbrina Virginiana*, *asarum Virginianum*, *serpentaria nigra*, or *contrayerva* of Virginia, has its leaves green and large, almost in figure of a heart; its fruit round, and its root, which is of a very strong aromatic smell, has, at bottom, an infinite number of long small filaments, representing a kind of beard, of a brownish color on the outside, and paler or yellowish within. It was first brought into Europe by the English; and is by the Americans esteemed a sovereign antidote against the bite of the rattle-snake.

We are told by travellers that this root not only cures the bite of a rattle-snake, but that that animal flies the very smell of it; for which reason the Indians, and other travellers, always carry it with them on the end of a staff. The dried root is imported into this country in bales, each containing from two to five hundred weight. The dried root has an aromatic odor, not unlike that of valerian; and a sharp, warm, bitter, taste, resembling in some degree that of camphor. Water extracts all the sensible qualities of the root, affording a yellowish brown infusion, which is not altered by sulphate of iron or zinc, the nitrate of silver, oxymuriate of mercury, tartarised antimony, the mineral acids, and the alkalies; nor is it precipitated by gelatine or tannin. The superacetate of lead throws down a flocculent precipitate, which is not soluble in acetic acid, showing the presence of mucus. With alcohol it affords a bright greenish tincture, which is rendered turbid by the addition of water. The active principles of serpentaria, therefore, appear to reside in a bitter resin; and perhaps camphor and essential oil.

The snake root is reckoned a stimulating diaphoretic and tonic. It is beneficially employed in typhoid and putrid fevers, whether idiopathic, or accompanying the exanthemata, to excite dia-phoresis, and support the powers of the system; and is found frequently to increase the efficacy of cinchona in removing protracted intermit-tents. It is also an excellent remedy in dyspepsia, particularly when the skin is dry and parched; and

is sometimes used as a gargle in putrid sore-throat. On account of its stimulant properties, it is contra-indicated when the inflammatory dia-thesis is present; and previous to its exhibition, the bowels should be well evacuated. It may be given in substance, or in infusion made by macerating 3*iv* of the bruised root in f.  $\frac{3}{2}$ *xii* of boiling water, in a covered vessel for two hours and straining. Decoction is a bad form of giving serpentaria, as the boiling dissipates the essential oil on which the virtues of the remedy chiefly depend. The dose of the powdered root is grs. x. or grs. xx. increased to  $\frac{3}{2}$ *ii*; that of the infusion f.  $\frac{3}{2}$ *ii* to f.  $\frac{3}{2}$ *ij*, every fourth hour. See *ARISTOLOCHIA*.

**SNAKESHEAD IRIS**, in botany. See *COLCHICUM*, and *HERMODACTYL*.

**SNAKESTONES**, or ammonitæ, in the old mineralogy, a large genus of fossil shells, very few if any of which are yet known in their recent state, or living either on our own or any other shores; so that it seems wonderful whence so vast a number and variety of them should be brought into our subterranean regions. They seem indeed dispersed in great plenty throughout the world, but nowhere are found in greater numbers, beauty, and variety, than in our own island. Mr. Harenberg found prodigious numbers of them on the banks of a river in Germany. He traced this river through its several windings for many miles, and among a great variety of belemnita, cornua ammonis, and cochlita, of various kinds; he found also great quantities of wood of recent petrification, which still preserved plain marks of the axe by which it had been cut from the trees then growing on the shore. The water of this river he found in dry seasons, when its natural springs were not diluted with rains, to be considerably heavier than common water; and many experiments showed him that it contained ferruginous, as well as stony particles, in great quantity, whence the petrifications in it appeared the less wonderful, though many of them of recent date. Of the cornua ammonis, or serpent-stones, he there observed more than thirty different species. They lie immersed in a bluish fossil stone, of a soft texture and fatty appearance in prodigious numbers, and of a great variety of sizes, from the larger known sorts down to such as could not be seen without very accurate inspection, or the assistance of a microscope. Such as lie in the softest of these stones are soft like their matrix, and easily crumble to pieces; others are harder. In a piece of this stone of the bigness of a finger it is common to find thirty or more of these fossils; and often they are seen only in form of white specks, so minute that their figure cannot be distinguished till examined by the microscope. They all consist of several volutæ, which are different in the different species, and their stria also are extremely various; some very deep with very high ridges between them, others very slight; some straight, others crooked; others undulated, and some terminating in dots, tubercles, or cavities towards the back, and others having tubercles in two or three places. They are composed of a great number of chambers or cells, in the manner of the nautilus Græcorum, each having a communication with the others by

means of a pipe or siphunculus. There is a small white shell-fish of Barbadoes, which seems truly a recent animal of this genus; and in the East Indies there is another also, small and grayish; but the large and beautifully marked ones are found only fossil. They are composed of various fossil bodies, often of quarry stone, sometimes of the matter of the common pyrites, and of a great variety of other substances; and though they appear usually mere stones, yet in some the pearly part of the original shell is preserved in all its beauty. Sometimes also, while the outer substance is of the matter of the pyrites, or other coarse, stony, or mineral matter, the inner cavity is filled with a pure white spar of the common plated texture. This gives a great beauty to the specimen. The cornua ammonis, or snake-stones, are found in many parts of England, particularly in Yorkshire, where they are very plentiful in the alum rocks, of several sizes.

**SKAKEWEED**, in botany. See POLYGONUM.

**SNAP**, *v. a. & v. n.* Belg. *snappen*. The *NAPPER*, *n. s.* { same with knap. To

**SNAP'ISH**, *adj.* { break at once; break short; strike with a sharp sound; catch suddenly; treat with sharp language: as a verb neuter, to break short; bite or attempt to bite with eagerness: a snap or snapper is, a greedy fellow; a quick eager bite: snappish corresponds.

If the young dace be a bait for the old pike, I see no reason but I may snap at him.

*Shakspeare. Henry IV.*

My father named me Autolicus, being lettered under Mercury; who, as I am, was likewise a snapper up of unconsidered trifles.

*Id. Winter's Tale.*

Note the ship's sicknesses; the mast Shaked with an ague, and the bold and waist With a salt dropsy clogged; and our tacklings Snapping, like to too high stretched treble strings.

*Donne.*

Sir Richard Graham tells the marquis he would snap one of the kids, and make some shift to carry him close to their lodgings.

*Wotton.*

With their bills, thwarted crosswise at the end, they would cut an apple in two at one snap.

*Carew.*

If the chain of necessity be no stronger, but that it may be snapped so easily in sunder; if his will was no otherwise determined from without himself, but only by the signification of your desire, and my modest intreaty, then we may conclude, human affairs are not always governed by absolute necessity.

*Brahmhall against Hobbes.*

Light is broken like a body, as when 'tis snapped in pieces by a tougher body.

*Digby.*

Some with a noise and greasy light Are snap, as men catch larks at night.

*Butler.*

Capoched your rabbins of the synod, And snapped their canons with a why not.

*Hudibras.*

Did I not see you, rascal, did I not, When you lay snug to snap young Damon's goat?

*Dryden.*

You should have thought of this before you was taken; for now you are in no danger to be snap singing again.

*L'Estrange.*

We snap at the bait without ever dreaming of the hook that goes along with it.

*Id.*

He had no sooner said out his say, but up rises a cunning snap, then at the board.

*Id.*

The backbone is divided into so many vertebres for commodious bending, and not one intire rigid bone, which, being of that length, would have been often in danger of snapping in sunder.

*Ruy on the Creation.*

They lived in the temple; but were such *snappish* curs, that they frightened away most of the votaries.

*Spectator.*

A notion, generally received, that a lion is dangerous to all women who are not virgins, may have given occasion to a foolish report, that my lion's jaws are so contrived as to snap the hands of any of the female sex who are not thus qualified.

*Addison's Spectator.*

Dauntless as death, away he walks; Breaks the doors open, snaps the locks; Searches the parlour, chamber, study, Nor stops till he has culprit's body. Prior. He snaps deceitful air with empty jaws, The subtle hare darts swift beneath his paws. Gay.

A gentleman passing by a coach, one of the horses snap off the end of his finger.

*Wisenman's Surgery.*

If your steel be too hard, that is, too brittle, if it be a spring, it will not bow; but with the least bending it will snap asunder.

*Moxon's Mechanical Exercises.*

The makers of these needles should give them a due temper: for, if they are too soft, they will bend; and, if they are too brittle, they snap.

*Sharp's Surgery.*

A surly ill-bred lord, That chides and snaps her up at every word.

*Granville.*

The snappish cur, the passengers annoy, Close at my heel with yelping treble flies. Pope.

*Towzer snaps*

At people's heels with frothy chaps. Swift.

The bowzy sire

First shook from out his pipe the seeds of fire, Then snap his box.

*Dunciad.*

*SNARE*, *n. s. & v. a.* { Swed. Isl. and Dan.

*SNA'RY*, *adj.* { snare; Belg. snoor. Any thing set to catch an animal; a gin; net; noose: to ensnare or entangle: the adjective corresponding, but inelegant.

The wicked is snared in the work of his own hands. Psalm ix. 16.

A fool's mouth is his destruction, and his lips are the snare of his soul. Proverbs xviii. 7.

This I speak for your own profit, not that I may cast a snare upon you. 1 Cor. vii. 35.

Glo'ster's shew

Beguiles him as the mournful crocodile

With sorrow snares relenting passengers.

*Shakspeare. Henry VI.*

Propound to thyself a constant rule of living, which, though it may not be fit to observe scrupulously, lest it become a snare to thy conscience, or endanger thy health, yet let not thy rule be broken.

*Taylor's Rule of Holy Living.*

O poor hapless nightingale, thought I, How sweet thou singest, how near the deadly snare!

*Milton.*

Warn all creatures from thee Henceforth, lest that too heavenly form pretended To hellish falsehood, snare them.

*Id. Paradise Lost.*

Beauty, wealth, and wit, And prowess, to the power of love submit; The spreading snare for all mankind is laid, And lovers all betray, or are betrayed. Dryden.

Spiders in the vault their snary webs have spread. Id.

**SNARL**, v. n. & v. a. } Belg. *snarren*. To  
  **SNARLER**, n. s. } growl as an angry ani-  
mal ; to gnar ; speak roughly ; embarrass or con-  
found : the noun substantive corresponding.

What ! were you *snarling* all before I came,  
Ready to catch each other by the throat,  
And turn you all your hatred now on me ?

Shakespeare. *Richard III.*

He is born with teeth !  
And so I was ; which plainly signified  
That I should *snarl*, and bite, and play the dog.

Shakespeare.

Now, for the bare-picked bone of majesty,  
Doth dogged war bristle his angry crest,  
And *snarleth* in the gentle eyes of peace.

*Id. King John.*

Confused *snarled* consciences render it difficult to  
pull out thread by thread. *Decay of Piety.*

The shes even of the savage herd are safe ;  
All, when they *snarl* and bite, have no return  
But courtship from the male.

Dryden's *Don Sebastian.*

'Tis malicious and unmanly to *snarl* at the little  
lapses of a pen, from which Virgil himself stands not  
exempted.

Dryden.

The honest farmer and his wife,  
Two years declined from prime of life,  
Had struggled with the marriage noose,  
As almost every couple does :  
Sometimes, my plague ! sometimes, my darling !  
Kissing to day, to-morrow *snarling*. *Prior.*

Where hast thou been *snarling* odious truths, and  
entertaining company with discourse of their diseases ?

Congreve.

Should stupid libels grieve your mind,  
You soon a remedy may find ;  
Lie down obscure, like other folks,  
Below the law of *snarlers* jokes. *Swift.*

**SNAST**, n. s. Teut. *schnaust*. The snuff of a candle.

It first burned fair, till some part of the candle  
was consumed, and the sawdust gathered about the  
*snast* ; but then it made the *snast* big and long, and burn duskyish, and the candle wasted in half the  
time of the wax pure. *Bacon.*

**SNATCH**, v. a., v. n., & } Dutch *snacken*.

**SNATCH'ER**, n. s. [n. s.] To seize or carry off any thing hastily : bite or catch at something suddenly : a hasty catch ; a small part of a thing ; short fit : the noun substantive following corresponding.

He shall *snatch* on the right hand, and be hungry. *Isa. ix. 20.*

After a shower to weeding a *snatch* ;  
More easily weed with the root to dispatch. *Tusser.*

A virtuous mind should rather wish to depart this world with a kind of treatable dissolution, than to be suddenly cut off in a moment : rather to be taken than *snatched* away from the face of the earth. *Hooker.*

Lords will not let me ; If I had a monopoly of fool, they would have part on't ; nay, the ladies too will be *matching*. *Shakespeare. King Lear.*

She chaunted *snatches* of old tunes,  
As one incapable of her own distress. *Id. Hamlet.*

Come, leave your *snatches*, yield me a direct answer. *Shakespeare.*

They of those marches  
Shall be a wall sufficient to defend  
Our inland from the pilfering borderers.  
—We do not mean the coursing *snatchers* only,  
But fear the main intendment of the Scot.

*Id. Henry V.*

. He had scarce performed any part of the office of a bishop in the diocese of London, when he was *snatched* from thence, and promoted to Canterbury.

*Clarendon.*

They move by fits and *snatches* ; so that it is not conceivable how they conduce unto a motion, which, by reason of its perpetuity, must be regular and equal.

*Wilkins's Dædalus.*

Death,

So *snatched*, will not exempt us from the pain. *Milton.*

In this work attempts will exceed performances, it being composed by *snatches* of time, as medical vacations would permit. *Browne's Vulgar Errors.*

Lycus, swifter of his feet,  
Runs, doubles, winds and turns, amidst the war ;  
Springs to the walls and leave his foes behind,  
And *snatches* at the beam he first can find.

*Dryden's Aeneid.*

We have often little *snatches* of sunshine and fair weather in the most uncomfortable parts of the year. *Spectator.*

Life's stream hurries all too fast :  
In vain sedate reflections we would make,  
When half our knowledge we must *snatch*, not take. *Pope.*

She *snatched* a sheet of Thule from her bed :  
Sudden she flies, and whelms it o'er the pyre ;  
Down sink the flames. *Id. Dunciad.*

They, sailing down the stream,  
Are *snatched* immediate by the quick-eyed trout,  
Or darting salmon. *Thomson's Summer.*

O nature !  
Inrich me with a knowledge of thy works,  
*Snatch* me to heaven. *Id. Autumn.*

**SNEAK**, v. n. } Sax. *fnican* ; Dan. *sneak* ;  
**SNEAKER**, n. s. } To creep slyly ;  
**SNEAKING**, part. adj. } skulk ; come or go as  
**SNEAKLINGLY**, adv. } if afraid to be seen ;  
**SNEAKUP**, n. s. } hence to behave with  
meanness or servility ; the derivatives cor-  
responding.

Once the eagle of England, being in prey,  
To her unguarded nest the weazel Scot  
Comes *sneaking*, and so sucks her princely eggs. *Shakespeare.*

*Sneak* not away, sir ; for the friar and you  
Must have a word anon ; lay hold on him. *Id.*

The prince is a jack, a *sneakup* ; and, if he were here, I would cudgel him like a dog, if he would say so. *Id. Henry IV.*

Do all things like a man, not *sneakingly* ;  
Think the king sees thee still. *Herbert.*

Are ye all ready ? Here's your musick here :  
Author, *sneak* off ; we'll tickle you, my dear. *More.*

While you *sneakingly* submit,  
And beg our pardon at our feet,  
Discouraged by your guilty fears  
To hope for quarter for your ears. *Hudibras.*

Discovered, and defeated of your prey,  
You skulked behind the fence, and *sneaked* away. *Dryden.*

I have just left the right worshipful and his myrmidons about a *sneaker* of five gallons. *Spectator.*

Nothing can support minds drooping and *sneaking*, and inwardly reproaching them, from a sense of their own guilt, but to see others as bad.

*South's Sermons.*

When the smart dialogue grows rich,  
With *sneaking* dog and ugly bitch. *Rowe.*

He *sneaked* into the grave,  
A monarch's half, and half a harlot's slave. *Dunciad.*

When interest calls off all her *sneaking* train,  
When all the obliged desert, and all the vain,  
She waits, or to the scaffold, or the cell,  
When the last lingering friend has bid farewell.

Pope.  
I ought not to turn my back, and to *sneak* off in  
silence, and leave the truth to lie baffled, bleeding,  
and slain. Watts.

SNEAP, *v. a. & n. s.* This word seems, says Dr. Johnson, a corruption of snib, or of snap, to reprimand. But see SNUB. To check; reprimand: the reprimand given.

Men shulde him *snibble* bitterly. Chaucer.

Which made this foolish briar wax so bold,  
That on a time he cast him to scold  
And *snibble* the good oak, for he was old. Spenser.

Asked for their pass by every squib,  
That list at will them to revile or *snib*.

Hubber's Tale.

What may

Breed upon our absence, may there blow  
No *sneaping* winds at home. Shakespeare.

My lord, I will not undergo this *snap* without reply: you call honourable boldness impudent sauciness: if a man will court'sy and say nothing, he is virtuous. Shakespeare. Henry IV.

SNEER, *v. n. & n. s.* Of the same family with snore and snort.—Johnson. Goth. *snerru* from *nera, nef*, the nose.—Thomson. To show contempt by looks; *naso suspendere adunco*: look scornfully; to insinuate contempt by covert expressions: a look or expression of this kind.

The wolf was by, and the fox in a *sneering* way advised him not to irritate a prince against his subjects. L'Estrange.

I had no power over one muscle of their faces, though they *sneered* at every word spoken by each other. Tatler.

I have not been *sneering* fulsome lies, and nauseous flattery at a little tawdry whore. Congreve.

I could be content to be a little *sneered* at in a line, for the sake of the pleasure I should have in reading the rest. Pope.

Did not the *sneer* of more impartial men, At sense and virtue, balance all agen. Id.

If there has been any thing expressed with too much severity, it will fall upon those *sneering* or daring writers of the age against religion, who have left reason and decency. Watts.

Socrates or Caesar might have a fool's coat clapt upon them, and in this disguise neither the wisdom of the one, nor the majesty of the other, could secure them from a *sneer*. Id.

SNEEZE, *v. n. & n. s.* Sax. *nieran*; Belg. *niesen*; Goth. *snesa*. To emit wind audibly by the nose: the act of doing so.

If one be about to *sneeze*, rubbing the eyes till tears run will prevent it; for that the humour descending to the nostrils is diverted to the eyes. Bacon.

I heard the racking, As earth and sky would mingle; but These flaws, though mortals fear them, Are dangerous to the pillared frame of heaven, Are to the main as wholesome as a *sneeze*. To man's less universe, and soon are gone. Milton's Paradise Regained.

We read in Godignus, that upon a *sneeze* of the emperor of Monomotapa there passed acclamations successively through the city.

Browne's Vulgar Errors.

If any thing oppress the head, it hath a power to free itself by *sneezing*. Ran on the Creation.

To thee Cupid *sneezed* aloud;  
And every lucky omen sent before,  
To meet thee landing on the Spartan shore.

Dryden.

Violent *sneezing* produceth convulsions in all the muscles of respiration: so great an alteration can be produced only by the tickling of a feather; and if the action of *meezing* should be continued by some very acrid substance, it will produce headache, universal convulsions, fever, and death. Arbuthnot.

If the pain be more intense and deeper within, amongst the membranes, there will be an itching in the palate and nostrils, with frequent *sneezing*.

Wiseman's Surgery.

An officer put the sharp end of his half-pike a good way up into my nostrils, which tickled my nose like a straw, and made me *sneeze* violently.

Swift.

SNEEZING, a convulsive motion of the muscles of the breast, whereby the air is expelled from the nose with much vehemence and noise. It is caused by the irritation of the upper membrane of the nose, occasioned by acrid substances floating in the air, or by medicines called sternutatory. See MEDICINE, Index. This irritation is caused either externally, by strong smells, as marjoram, roses, &c., or by dust floating in the air, and taken in by inspiration; or by sharp pungent medicines, as cresses and other sternutatories, which vivify the membrane of the nose; or internally, by the acrimony of the lympha or mucus, which naturally moistens that membrane. The matters cast forth in sneezing come primarily from the nose and throat, the pituitary membrane continually exuding a mucus thither; and, secondarily, from the breast, the trachea, and the bronchia of the lungs. The practice of saluting the person who sneezed existed in Africa among nations unknown to the Greeks and Romans. Strada, in his account of Monomotapa, informs us (Prol. Acad.), that when the prince sneezes all his subjects in the capital are advertised of it, that they may offer up prayers for his safety. The author of the Conquest of Peru assures us that the cacique of Guachioha having sneezed in presence of the Spaniards, the Indians of his train fell prostrate before him, stretched forth their hands, and displayed to him the accustomed marks of respect, while they invoked the sun to enlighten him, to defend him, and to be his constant guard. The ancient Romans saluted each other on these occasions: and Pliny relates that Tiberius exacted these signs of homage when drawn in his chariot. Superstition, whose influence debases every thing, had degraded this custom for several ages by attaching favorable or unfavorable omens to sneezing, according to the hour of the day or night, according to the signs of the zodiac, according as a work was more or less advanced, or according as one had sneezed to the right or to the left. If a man sneezed at rising from table, or from his bed, it was necessary for him to sit or lie down again.

'You are struck with astonishment,' said Timotheus to the Athenians, who wished to return into the harbour with their fleet, because he had sneezed; 'you are struck with astonishment, because among 10,000 there is one man whose brain is moist.' Polydore Virgil pretends that, in the time of Gregory the Great, there reigned

in Italy an epidemic distemper, which carried off by sneezing all those who were seized by it; and that this pontiff ordered prayers to be made against it, accompanied by certain signs of the cross. But this is not credible, as there are very few cases in which sneezing is dangerous, and it is frequently a favorable symptom. Yet the compiler of this work knew an instance of a man, apparently in health, dying almost instantaneously after a fit of sneezing in a barber's shop at Montrose, into which he had come to be dressed, on Saturday the 16th September, 1786. Nor was the fit either violent or tedious. He had only sneezed the third time. But as no inspection was made of his body, to see whether his death was occasioned by the rupture of a blood-vessel or any other cause, no decisive inference can be drawn from this solitary fact. Avicenna and Carden say it is a sort of convulsion, which gives occasion to dread an epilepsy. Clement of Alexandria inveighs bitterly against those who endeavour to procure sneezing by external aid. It is singular enough that so many ridiculous, contradictory, and superstitious opinions, have not abolished those customary civilities which are still preserved equally among high and low. The reason is obvious. They are preserved because they are esteemed civilities, and because they cost nothing. Among the Greeks sneezing was almost always a good omen. It excited marks of tenderness, of respect, and attachment. The young Parthenis, hurried on by her passion, resolved to write to Sarpedon an avowal of her love; she sneezes in the most tender and impassioned part of her letter: this is sufficient for her; this incident supplies the place of an answer, and persuades her that Sarpedon is her lover. Penelope, harassed by the vexatious courtship of her suitors, begins to curse them all, and to pour forth vows for the return of Ulysses. Her son Telemachus interrupts her by a loud sneeze. She instantly exults with joy, and regards this sign as an assurance of the approaching return of her husband.—*Hom. Odys. lib. xvii.* Xenophon was haranguing his troops; a soldier sneezed in the moment when he was exhorting them to embrace a dangerous but necessary resolution. The whole army, moved by this presage, determined to pursue the project of their general; and Xenophon orders sacrifices to Jupiter the preserver. This superstitious reverence for sneezing, so ancient and so universal even in the times of Homer, excited the curiosity of the Greek philosophers and of the rabbins. These last have a most absurd tradition respecting it. Aristotle remounts likewise to the sources of natural religion, because the brain is the origin of the nerves, of our sentiments, sensations, &c. Such were the opinions of the most ancient and sagacious philosophers of Greece; and mythologists affirmed that the first sign of life Prometheus's artificial man gave was by sternutation. See PROMETHEUS.

**SNELL** (Rodolph), an eminent Dutch philosopher, born at Oude-Water in 1546. He was many years professor of Hebrew and mathematics in the university of Leyden. He published several works on Geometry, and other branches of science. He died at Leyden in 1613.

**SNELL** (Willebrord), styled Snellius in his

Latin works, the son of Rodolph, succeeded his father in the mathematical chair at Leyden in 1613, and excelled him in his discoveries. He was the first who discovered the true law of refraction of the rays of light; and Des-Cartes, who saw his papers, borrowed his discovery, without acknowledging the obligation. See OPTICS, INDEX. His works are numerous and respectable. The chief of them is his *Cyclometricus de Circuli Dimensione, &c.*, 4to., 1621. In this treatise he gives several approximations to the measure of the circle, both arithmetical and geometrical. He died in 1626.

**SNETTISHAM**, PORT, a harbour on the north-west coast of America, in Stephens's Passage; it extends a league from its entrance in a north-east direction, where, on each side, the shores form an extensive cover, and terminate in a sandy beach, with a fine stream of water. The shores are high and steep. Long. of its north-west point,  $226^{\circ} 22' E.$ , lat.  $57^{\circ} 53' N.$

**SNEUWBERG**, or SNOW MOUNTAIN, an extensive range in the district of Graaf Reynet, Cape of Good Hope. It forms one of the divisions into which this district is divided; the pasture is excellent, and the district is the grand repository of sheep and cattle from the colony.

**SNELLING** (Thomas), an English writer on coins, who died in 1773. He published a treatise on the Silver Coin and Coinage of England, 1762, 4to.; The Gold Coin and Coinage of England, 1763, 4to.; and, after his death appeared Thirty-three Plates of English Medals, 1776, 4to.; and A View of the Origin, Nature, and Use of Jettons or Counters, especially those commonly known by the name of Black Money and Abbey Pieces, 1779, 4to.

**SNICK AND SNEE**, or **SNICKER-SNEE**, *n. s.* Belg. *snicker-snee*. A combat with knives.

Among the Dugirkers, where *snick* and *snee* was in fashion, a boatswain, with some of our men drinking together, became quarrelsome: one of our men beat him down; then, kneeling upon his breast, he drew out a knife sticking in his sash, and cut him from the ear towards the mouth.

*Wiseman's Surgery.*

**SNIFF**, *v. n.* Swed. *sniffa*. To draw breath audibly up the nose.

So then you looked scornful, and *snift* at the dean  
As who should say, Now am I skinny and lean!

*Swift.*

**SNIG'GLE**, *v. n.* Perhaps of Belg. *snicker*, to cut.

*Sniggle* is thus performed: in a warm day, when the water is lowest, take a strong small hook, tied to a string about a yard long; and then into one of the holes where an eel may hide herself, with the help of a short stick, put in your bait leisurely, and as far as you may conveniently: if within the sight of it the eel will bite instantly, and as certainly gorge it: pull him out by degrees. *Walton's Angler.*

**SNIP**, *v. a.* Belg. *snippen*; Swed. *snopa*. To clip; cut at once with scissars: a cut of this kind; a small shred or share.

What! this a sleeve?

Here's *snip* and *snip*, and cut, and slish and slash,  
Like to a censor in a barber's shop. *Shakespeare.*

He found his friend upon the mending hand,  
which he was glad to hear, because of the *snip* that  
he himself expected upon the dividend. *L'Estrange.*

When tradesmen brought extravagant bills, Sir Roger used to bargain to cut off a quarter of a yard : he wore a pair of scissars for this purpose, and would *nip* it off nicely. *Arbuthnot.*

The sinus should be laid open, which was *snipe* up about two inches with a pair of probe-scissars, and the incised lips dressed. *Wiseman's Surgery.*

The ulcer would not cure farther than it was laid open ; therefore with one *snip* more I laid it open to the very end. *Id.*

Those we keep within compass by small *snips* of emplast, hoping to defend the parts about ; but, in spite of all, they will spread farther. *Id.*

Putting one blade of the scissars up the gut, and the other up the wound, *snip* the whole length of the fistula. *Sharp.*

**SNIPE**, *n. s.* Sax. *fnita*; Dan. *sneppe*. A small fen fowl with a long bill ; a fool ; a block-head.

Thus do I ever make my fool my purse ;  
For I mine own gained knowledge should profane,  
If I should time expend with such a *snipe*,  
But for my sport and profit. *Shakspeare. Othello.*

The external evident causes of the atra bilis are a high fermenting diet ; as old cheese, birds feeding in fens, as geese, ducks, woodcocks, *snipes*, and swans. *Floyer.*

**SNIPE.** See **SCOLOPAX** and **SHOOTING**.

**SNIP'PET**, *n. s.* From *snip*. A small part ; a share.

Witches simpling, and on gibbets

Cutting from malefactors *snippets* ;

Or from the pillory tips of ears. *Hudibras.*

**SNIP'SNAP**, *n. s.* A cant word formed by reduplication of *snap*. Tart dialogue, with quick replies.

Dennis and dissonance, and captious art,  
And *snipsnap* short, and interruption smart. *Pope's Dunciad.*

**SNITE**, *n. s.* Sax. *fnita*. A snipe. This is perhaps the true name ; but snipe prevails.—Johnson.

Of tame birds Cornwall hath doves, geese, and ducks : of wild, quail, rail, *snite*, and wood-dove. *Carew.*

Nor would any one be able to *snite* his nose, or to sneeze ; in both which the passage of the breath through the mouth, being intercepted by the tongue, is forced to go through the nose. *Grew's Cosmologia.*

**SNIVEL**, *n. s. & v. n.* { Germ. *snavel*, *sne-*

**SNIV'ELLER**, *n. s.* { vcl. The mucus of the nose : to run at the nose ; to cry as children : the noun substantive following corresponding.

Funeral tears are hired out as mourning cloaks ; and whether we go to our graves *snivelling* or singing, 'tis all mere form. *L'Estrange.*

He'd more lament when I was dead,

Than all the *snivellers* round my bed. *Swift.*

Ye writers of what none with safety reads,

Footing it in the dance that fancy leads :

Ye novelists, who mar what ye would mend,

*Sniveling* and driveling folly without end. *Couper.*

**SNORE**, *v. n.* Belg. *snorcken* ; Dan. *snore* ; Goth. *snerrra*. See **SNEER**. To breathe hard through the nose, as men in sleep.

The surfeited grooms

Do mock their charge with *snores* : I've drugged their

possets. *Shakespeare. Macbeth.*

I did unreverently blame the gods,

Who wake for thee, though thou *snore* for thyself. *Ben Jonson.*

Whose railing heroes, and whose wounded gods  
Makes some suspect he *snores* as well as nods.

*Roscommon.*

He may lie in his shades, and *snore* on to doomsday for me ; unless I see farther reason of disturbing his repose. *Stillingfleet.*

Is not yonder Proteus' cave ?

It is, and in it lies the god asleep ;

And *snoring* by

We may descry

The monsters of the deep. *Dryden's Albion.*

The giant, gorged with flesh, and wine, and blood,  
Lay stretched at length, and *snoring* in his den,  
Belching raw gobbs from his maw, o'recharged,  
With purple wine and cruddled gore confused.

*Addison.*

**SNORING**, in medicine, otherwise called stertor, is a sound like that of the cerchnon, but greater and more manifest. Many confound those affections, and make them to differ only in place and magnitude, calling by the name of stertor that sound or noise which is heard or supposed to be made in the passage between the palate and the nostrils as in those who sleep ; that boiling or bubbling noise, which in respiration proceeds from the larynx, or head, or orifice of the aspera arteria, they call cerchnon ; but, if the sound comes from the aspera arteria itself, they will have it called cerchnos, that is, as some say, a rattling, or, as others, a stridulous or wheezing roughness of the aspera arteria. In dying persons, this affection is called by the Greeks *pexxos*, rhenchos, which is a snoring or rattling kind of noise, proceeding as it were from a conflict between the breath and the humours in the aspera arteria. This and such like affections are owing to a weakness of nature, as when the lungs are full of pus or humors. Expectoration is suppressed either by the viscosity of the humor, which requires to be discharged, and which adhering to the aspera arteria, and being there agitated by the breath, excites that bubbling noise or stertor ; or by an obstruction of the bronchia ; or, lastly, by a compression of the aspera arteria, and throat, whence the passage is straightened, in which the humors, being agitated, excite such a kind of noise as before described. Hence Galen calls those who are straight-breasted, stertorous. He assigns two causes of this symptom, which are either the straightness of the passage of respiration, or redundancy of humors, or both ; but we may add a third, to wit, the weakness of the faculty, which is the cause of the rhenchos in dying persons, where nature is too weak to make discharges. Hence we may conclude that this symptom, or this sort of fervor or ebullition in the throat, is not mortal, unless when nature is oppressed with the redundancy of humor in such a manner that the lungs cannot discharge themselves by spitting ; or the passage appointed for the breath (the aspera arteria) is very much obstructed, upon which account many dying persons labor under a stertor with their mouths gaping.

**SNORRO** (Sturlesonius), a native of Iceland, in the thirteenth century, who was minister of state to a king of Sweden and to three kings of Norway. He was forced, by an insurrection, to leave Norway, and take refuge in Iceland, where he lived till 1241, when he was discovered,

carried off, and put to death. He wrote, 1. *Chronicum Regum Norvigorū*; and 2. *Edda Islandica, or a History of Icelandic Philosophy*.

**SNORT,** *v.n.* Belg. *snorcken*. See **SNORE**.  
To blow through the nose like a horse.

The *snorting* of his horses was heard.

*Jeremiah viii. 16.*

The fiery war-horse paws the ground,  
And *snorts* and trembles at the trumpet's sound.

*Addison.*

From their full racks the generous steeds retreat,  
Dropping ambrosial foams, and *snorting* fire.

*Id. Ovid.*

He with wide nostrils, *snorting*, skims the wave.  
*Thomson.*

The bounding fawn, that darts across the glade  
When none pursues, through mere delight of heart,  
And spirits buoyant with excess of glee;  
The horse, as wanton and almost as fleet,  
That skims the spacious meadow at full speed,  
Then stops and *snorts*, and, throwing high his heels,  
Starts to the voluntary race again.

*Couper.*

**SNOT,** *n.s.* } Saxon *fnoce*; Belg. *snot*.  
**SNOT'RY,** *adj.* } The mucus of the nose: the  
adjective corresponding.

This squire South my husband took in a dirty  
*motty-nosed* boy.

*Arbuthnot.*

Thus, when a greedy sloven once has thrown  
His *snot* into the mess, 'tis all his own.

*Swift.*

**SNOUT,** *n.s.* } Belg. *smuyt*; Swed. *snude*;  
**SNOUT'ED,** *adj.* } Dan. *synte*. The nose of a  
beast; applied the human nose in contempt; a  
nozzle; having a snout.

His nose in the air, his *snout* in the skies.

*Tusser.*

Their dogs *snouted* like foxes, but deprived of that  
property which the logicians call *proprium quarto  
modo*, for they could not bark.

*Heylyn.*

Her subtle *snout*

Did quickly wind his meaning out.

*Hudibras.*

But when the date of Nock was out,

Off dropt the sympathetic *snout*.

*Id.*

In shape a beagle's whelp throughout,  
With broader forehead, and a sharper *snout*.

*Dryden.*

What *Aethiop* lips he has,

How foul a *snout*, and what a hanging face!

*Id. Juvenal.*

*Snouted* and tailed like a boar, and footed like a

*goat.*

Charmed with his eyes, and chin, and *snout*,

Her pocket-glass drew slyly out;

And grew enamoured with her phiz,

As just the counterpart of his.

*Swift.*

**SNOW,** *n.s., v.n., &* } Sax. *rnap*; Belg. and

**SNOW'BALL,** [v. a.] } Dan. *sne*. The small

**SNOW'BROTH,** } particles of water frozen

**SNOW'DROP,** } before they unite into

**SNOW'WHITE, adj.** } drops: see below: to

**SNOW'y.** } fall in snow; scatter

like snow: the snow-ball is well known: snow-

broth is used by Shakspeare for very cold liquor:

snowdrop is an early flower: the adjectives fol-

lows the noun substantive snow in meaning.

Drought and heat consume *snow* waters.

*Job xxiv. 19.*

Angelo, a man whose blood

Is very *snowbroth*, one who never feels

The wanton stings and motions of the sense.

*Shakspeare.*

So shews a *snowy* dove trooping with crows,

ouder lady o'er her fellow shews.

*Id.*

They passed to the east-riding of Yorkshire, their  
company daily increasing, like a *snowball* in rolling.

*Hayward.*

If thou be'st born to see strange sights,

Ride ten thousand days and nights,

Till age *snow* white hairs on thee.

*Donne.*

These first in Crete

And Ida known; thence on the *snowy* top

Of cold Olympus ruled the middle air.

*Milton's Paradise Lost.*

The hills being high about them, it *snows* at the  
tops of them oftener than it rains.

*Browne's Travels.*

When we tried the experiment with the leaves of  
those purely white flowers that appear about the end  
of winter, called *snowdrops*, the event was not much  
unlike that newly mentioned.

*Boyle on Colours.*

His bulky folly gathers as it goes,  
And, rolling o'er you, like a *snowball* grows.

*Dryden.*

A *snow-white* bull shall on your shore be slain,  
His offered entrails cast into the main.

*Id. Aeneid.*

A *snowball* having the power to produce in us the  
ideas of white, cold, and round, the powers, as they  
are in the *snowball*, I call qualities; and, as they  
are sensations in our understandings, ideas.

*Locke.*

Now I see thy jolly train:

*Snowy* headed winter leads,

Spring and summer next succeeds;

Yellow autumn brings the rear;

Thou art father of the year.

*Rowe.*

The blushing ruby on her *snowy* breast  
Rendered its panting whiteness more confess.

*Prior.*

The little shape, by magick power,  
Grew less and less, contracted to a flower;  
A flower that first in this sweet garden smiled,  
To virgins sacred, and the *snowdrop* styled.

*Tucket.*

He gives the winter's *snow* her airy birth,  
And bids her virgin fleeces clothe the earth.

*Sandys.*

Soft as the fleeces of descending *snows*.

*Pope.*

But now your brow is bald, John,  
Your locks are like the *snow*;

But blessings on your frosty pow,

John Anderson my jo.

*Burns.*

Sends Nature forth, the daughter of the skies,  
To dance on earth, and charm all human eyes;  
To teach the canvass innocent deceit,  
Or lay the landscape on the *snowy* sheet—  
These, these are arts pursued without a crime,  
That leave no stain upon the wing of time.

*Couper.*

Her anchor parts: but still her *snowy* sail  
Attracts our eye amidst the rudest gale:  
Though every wave she climbs divides us more,  
The heart still follows from the loneliest shore.

*Byron.*

Snow is a well known meteor, formed by the  
freezing of the vapors in the atmosphere. It  
differs from hail and hoar frost, in being as it  
were crystallised, which they are not. This ap-  
pears on examining a flake of snow by a magni-  
fying glass; when the whole of it will appear to  
be composed of fine shining spicula diverging  
like rays from a centre. As the flakes fall down  
through the atmosphere, they are continually  
joined by more of these radiated spicula, and  
thus increase in bulk like the drops of rain or  
hailstones. Dr. Grew, in a discourse on the na-  
ture of snow, observes that many parts thereo-  
are of a regular figure, for the most part stars of  
six points, and are as perfect and transparent ice  
as any we see on a pond, &c. Upon each o-  
these points are other collateral points, set at the  
same angles as the main points themselves;  
among which there are divers other irregular

broken points, and fragments of the regular ones. A cloud of vapors, being gathered into drops, descend; meeting with a freezing air as they pass through a colder region, each drop is immediately frozen, shooting itself forth into several points; but these still continuing their descent, and meeting with some intermitting gales of warmer air, or in their continual waftage to and fro touching upon each other, some of them are a little thawed, blunted, and again frozen into clusters, or intangled so as to fall down in what we call flakes. The lightness of snow is owing to the excess of its surface, in proportion to the matter contained under it. The whiteness of snow is owing to the small particles into which it is divided; for ice, when pounded, will become equally white. Beccaria says, clouds of snow differ in nothing from clouds of rain, but in the circumstance of cold that freezes them. Both the regular diffusion of the snow, and the regularity of the structure of its parts (particularly some figures of snow or hail which fall about Turin, and which he calls rosette), show that clouds of snow are acted upon by some uniform cause like electricity; and he endeavours to show how electricity is capable of forming these figures. He was confirmed in his conjectures by observing that his apparatus for observing the electricity of the atmosphere never failed to be electrified by snow as well as rain. Professor Winthrop sometimes found his apparatus electrified by snow when driven about by the wind, though it had not been affected by it when the snow itself was falling. A more intense electricity, according to Beccaria, unites the particles of hail more closely than the more moderate electricity does those of snow. But we are not to consider snow merely as a curious and beautiful phenomenon. The Great Dispenser of universal bounty has so ordered it that it is eminently subservient, as well as all his works of creation, to his benevolent designs. Snow, particularly in those northern regions where the ground is covered with it for several months, fructifies the earth, by guarding the corn or other vegetables from the intense cold of the air, and especially from the cold piercing winds. It has been a vulgar opinion, very generally received, that snow fertilises the lands on which it falls more than rain, in consequence of the nitrous salts which it is supposed to acquire by freezing. But by Margraaf's experiments, in 1751, the chemical difference between snow and rain, is found to be exceedingly small. The peculiar agency of snow as a fertilizer, in preference to rain may admit of a very rational explanation, without recurring to the supposition of its containing nitrous salts. It may be ascribed to its furnishing a covering to the roots of vegetables, by which they are guarded from the influence of the atmospherical cold, and the internal heat of the earth is prevented from escaping. The internal parts of the earth, by some principle (whether it be the electric fluid, or the principle called caloric by modern chemists, is not yet discovered), is heated uniformly to 48° of Fahrenheit's thermometer. This degree of heat is greater than that in which the watery juices of vegetables freeze, and it is propagated from the inward parts of the earth to

the surface, on which the vegetables grow. The atmosphere being variably heated by the action of the sun in different climates, and in the same climate at different seasons, communicates to the surface of the earth, and to some distance below it, the degree of heat or cold which prevails in itself. Different vegetables are able to preserve life under different degrees of cold, but all of them perish when the cold which reaches their roots is extreme. Providence has, therefore, in the coldest climates, provided a covering of snow for the roots of vegetables, by which they are protected from the influence of the atmospherical cold. The snow keeps in the internal heat of the earth which surrounds the roots of vegetables, and defends them from the cold of the atmosphere. (But some say it does more.) Snow or ice water is always deprived of its fixed air, which escapes during the process of congelation. Some have supposed this to be the cause why some of the inhabitants of the Alps, who use it for their constant drink, have enormous wens upon their throats. But this is refuted by the fact that in Greenland, where snow water is commonly used, the inhabitants are not affected with such swellings; whereas they are common in Sumatra, where snow is never seen.

Notwithstanding Margraaf's experiment above mentioned discovered little difference between snow and rain in their fertilizing qualities, the enquiry has been renewed and prosecuted farther, by some of the most eminent French chemists of the present age. Citizen Morveau, alias citizen Guyton, employed J. H. Hassenfratz to inquire into the cause of the difference of the effects of snow and rain water on various substances. Hassenfratz found that these differences are occasioned by the oxygenation of the snow; and that these effects are to be ascribed to a particular combination of oxygen in this congealed water. He put 1000 grammes of snow in a jar, and 1000 grammes of distilled water in another. See MEASURE. He poured into each of the jars an equal quantity of the same solution of turnsole. He placed both the jars in a warm temperature; and, after the snow melted, he remarked that the dye was redder in the snow water than in the distilled water. He repeated this experiment, and with the same result. He put into a jar 1000 grammes of distilled water, and into another 1000 grammes of snow. Into each of the jars he put 6·5 grammes of very pure and clean sulphate of iron. In the first there was precipitated 0·150 grammes of the oxide of iron, and 0·010 grammes in the other. As the oxide of iron was precipitated from a solution of the sulphate by oxygen, it thence follows that the snow contained more oxygen than the distilled water; and it follows, from the first experiment, that this quantity of oxygen was considerable enough to redden the tincture of turnsole. It is fully demonstrated, by these two experiments, that snow is oxygenated water, and that it must consequently have on vegetation an action different from that of common ice. The experiments of Dr. Ingenhousz on the germination of seeds have taught us that the presence and contact of oxygen are absolutely necessary for the plant to expand. They have shown, also, that the more

abundant the oxygen is, the more rapidly will the seeds grow. Most plants suffered to attain to their perfect maturity shed on the earth a part of their seed. These seeds thus abandoned, and exposed to the action of cold, are preserved by the snow which covers them, at the same time that they find in the water it produces by melting a portion of oxygen that has a powerful action on the principle of germination, and determines the seeds that would have perished, to grow, to expand, and to augment the number of the plants that cover the surface of the earth. A very considerable number of the plants which are employed in Europe for the nourishment of men are sown in September, October, and November. The seeds of several of these germinate before the cold commences its action upon them, and changes the principle of their life. The snow which covers the rest, acting on the germ by its oxygenation, obliges them to expand, and to increase the number of useful plants which the farmer and gardener commit to the earth, and consequently to multiply their productions. Here, then, we have three effects of snow upon vegetation, all very different, which contribute each separately to increase, every year, the number of our plants; to give them more vigor, and consequently to multiply our crops. These effects are:—1. To prevent the plants from being attacked by the cold, and from being changed or perishing by its force. 2. To furnish vegetables with continual moisture, which helps them to procure those substances necessary for their nutrition, and to preserve them in a strong healthy state. 3. To cause a greater number of seeds to germinate, and consequently to increase the number of our plants.

To determine the quantity of water a given quantity of snow is equal to, we have an ingenious article in the Philosophical Transactions, from the pen of Mr. Alexander Brice, of Kirknewton, dated May 13, 1766; in which he observes that, from the end of March 1765 to the end of September of the same year, they had very little rain in that part of Scotland, and less snow in proportion: the rivers were as low, through the winter, as they used to be in the middle of summer; springs failed in most places, and brewers and malsters were obliged, even in winter, to carry their water from a considerable distance. In the end of March they had a fall of snow; and, as he did not remember to have ever read an account of such an experiment, he wished to be able to determine to what quantity of rain this fall of snow was equal. The snow had been falling from five o'clock the former evening till ten o'clock next day; about eleven o'clock he measured the depth of snow, and found it to be 6·2 inches; he then took a stone jug, holding about three English pints, and turned the mouth of it downwards on the snow measured, and where the ground below was smooth and hard; and by this means he took up all the snow from top to bottom in the jug; this snow he melted by the side of a fire, and the 6·2 inches of snow yielded six-tenths of an inch deep of water in the same jug. After emptying the jug, he dried, and weighed it in a balance, and took up the same quantity of snow in it as before,

weighed it again, and found the weight of the snow taken up, and from this weight computed what quantity of water it should have produced, and found that it should have produced six-tenths of an inch, and one-twentieth of an inch more; he then dissolved the snow, and found that it yielded a quantity of water in the bottom of the jug six-tenths of an inch deep, as in the former experiment. The difference of one-twentieth of an inch in the depth of the water, between the weight and the melting of the snow, was probably owing to an exhalation from the jug, while the snow was melting by the fire, for he observed a steam sometimes rising from it. A greater or less degree of cold, or of wind, while the snow falls, and its lying a longer or shorter time on the ground, will occasion a difference in the weight, and in the quantity of water produced, from a certain number of cubic feet, or inches, of snow; but if he may trust to the above trials, which he endeavoured to perform with care, snow, newly fallen, with a moderate gale of wind, freezing cold, which was the case of the snow he made the trials on, the 27th of March, will produce a quantity of water equal to one-tenth part of its bulk; or the earth, when covered with snow, ten inches deep, will be moistened by it when melted, or rivers and springs recruited, as much as if a quantity of rain had fallen that had covered the surface of the earth to the depth of one inch.

*Mode of the formation of snow.*—‘The frequent changes of the weather that have taken place during the last winter (1804),’ says a writer in Nicholson’s Philosophical Journal, ‘having induced me to direct my attention to meteorology, I confess that the manner in which philosophers account for some of the phenomena that occur, is not, to me, altogether satisfactory.

‘It is not surprising that electricity (with the immediate agency of which we are so little acquainted) should be resorted to, as the grand agent in all meteorological phenomena. Accordingly we find that snow, and indeed every variety of weather we experience, is considered to be more or less affected by the electric fluid.

‘Snow is generally supposed to be the vapors of the atmosphere, disengaged by the electric fluid, and frozen. But it appears to me that, before we receive so vague an explanation, the following questions might be asked:—What are the vapors of the atmosphere composed of? By what laws, and in what manner does the electric fluid act, either in the formation of snow, or as a component part of it?

‘I shall now offer a few remarks to strengthen a supposition that the electric fluid is not engaged in, or in the least essential to the production or existence of snow. By an attentive observation of all the circumstances that have attended the fall of snow, during the last winter, I have, in almost every instance, found that it is accompanied with, or rather preceded by a change of the wind; and that the wind, previous to the fall of snow, blew from some point between the south and the west; and afterward from some point between the east and the northwest. If it is observed that we have sometimes snow without the wind changing to any of the

points abovementioned, or even without a visible change to us, yet it does not militate against the following remarks; for it has been observed by aéronauts, that different strata of air blow from opposite points at the same time. Therefore, notwithstanding a south wind may prevail at the surface of the earth, a superior stratum may blow from the north.

Such being the facts, is it not probable that a change of the wind is the cause of snow?

Now let us examine whether such a cause will produce such an effect:—The winds that blow from any of the points between the south and the west, by coming from warm climates, and passing over, perhaps, a very large tract of water, where there is a powerful evaporation going on, must possess a very great degree of humidity, and are most commonly of a temperature between 45° and 60° of Fahrenheit. The winds which blow from any of the points between the east and the north-west, by coming mostly from such high latitudes, and passing over immense fields of ice, where evaporation is undoubtedly greatly impeded, cannot be supposed to contain much water in solution, but must bring with them very great degrees of cold.

Now let us suppose that a north wind of any temperature between 32° and 0° (which it generally is in superior strata of the atmosphere) meets a south-west wind, as before-mentioned, the consequence will be that the intense cold which accompanies the former will convert the water with which the latter is impregnated into ice; and the instantaneous application of cold is probably the reason why snow is produced in what we call flakes; for before the vapor can concentrate itself into large particles, or drops, it is arrested by the intense cold.

In this view, the formation of snow appears to be a beautiful chemical phenomenon; for, the warmer air having a greater affinity for the colder air than it has for the water which is held in solution, the water is disengaged, crystallised by the cold, and precipitated in the form of snow. It is generally observed that it is unusually cold for half an hour or an hour before the fall of snow, and warmer afterwards. Might not this be accounted for by considering that the adverse wind must meet with consistence, in effecting either a union with, or a passage through a stratum of air surcharged with water, and consequently must be in a great degree reflected back again, not in the perpendicular, but as radii from a centre, in an oblique direction, part of which must descend to the earth. And it will undoubtedly be warmer, after the stratum of north wind has either forced a passage through or effected a union with the south-west wind. Though I have not, in the preceding observations, considered the electric fluid as at all essential to the production of snow, yet I do not deny the presence of it. That snow contains the electric fluid cannot be doubted; but it does not follow that the latter is necessary to the existence of the former. We know of no substance in nature that is impervious to that subtle fluid; it seems to pervade all bodies with nearly the same facility as caloric. Therefore, though snow indicates electricity, it is probably no more than it has

acquired in its passage through an electrified atmosphere.'

*Luminous and inflammable exhalation on snow.*—We may perhaps ascribe the greater number of luminous exhalations that float over the surface of the earth to the extrication and inflammation of hydrogen gas, similar to that which is so frequently elicited in coal mines, under the name of fire-damp. In the midst of the snows on the summit of the Appennines was traced, in the middle of last century, a luminous and burning exhalation, which evidently proceeded from this cause. It is clearly and accurately described by Robert More, esq., in a letter published in the Philosophical Transactions, vol. xlvi.; in which, among other facts of natural history, he observes that the fire among the snows on the summit of the Appennines is of the same sort with that about a little well at Broseley, in Shropshire, of which the Society has had an account; the same as of the foul air sent them from Sir James Lowther's coal pits; and the like made by a gentleman with filings of iron and oil of vitriol. The flame, when he saw it, was extremely bright, covered a surface of about three yards by two, and rose about four feet high. After great rains and snows, it is said, the whole bare patch, of about nine yards diameter, flames. The gravel, out of which it rises, at a very little depth, is quite cold. There are three of these fires in that neighbourhood; and there was one they call extinct. He went to the place to light it up again, and left it flaming. The middle of the last place is a little hollowed, and had in it a puddle of water; there were strong ebullitions of air through the water; but the air would not take fire; yet what rose through the wet and cold gravel flamed brightly. Near either of these flames, removing the surface of the gravel, that below would take fire from lighted matches.

Snow, in sea affairs, is generally the largest of all two-masted vessels employed by Europeans, and the most convenient for navigation. The sails and rigging on the mainmast and foremast of a snow are exactly similar to those on the same masts in a ship; only that there is a smaller mast behind the mainmast of the former, which carries a sail nearly resembling the mizen of a ship. The foot of this mast is fixed on a block of wood on the quarter-deck abaft the mainmast; and the head of it is attached to the aftertop of the maintop. The sail, which is called the trysail, is extended from its mast towards the stern of the vessel. When the sloops of war are rigged as snows, they are furnished with a horse, which answers the purpose of the trysail-mast; the fore part of the sail being attached by rings to the said horse, in different places of its height.

The SNOW-PLOUGH, in rural economy, is a contrivance made use of in Sweden, and other northern countries, for the purpose of clearing roads from snow. It consists of a shaft, to which the horses are yoked, usually two abreast, and one before. The sides are constructed of three or four deals, well jointed and nailed together, having more or less height, according as the snow is more or less deep, as from three to four feet. The length is usually about

fifteen feet, and two iron bars are nailed to the bottom, to make it slide with greater facility. It has also a box for the purpose of being loaded, to keep it down. It may have any breadth, from fifteen to twenty feet, according as the snow may want clearing. There is a representation of an implement of this kind, in the first volume of Communications to the Board of Agriculture.

**SNOW-STONE**, in mineralogy, a name given to a very beautiful stone found in America, of which the Spaniards are very fond, making it into tables and other ornaments in their houses. Alonso Barba, who had seen much of it, tells us that it is found in the province of Atacama, usually in pieces of four feet long, and four or five inches broad, so that they are forced to join them in the working. Its general thickness is about two inches. It has a great variety of colors, which form clouds and variegations of a very beautiful kind. The principal colors are red, yellow, green, black, and white. The white is generally formed into spots on the very blackest parts of the mass, and is so beautifully disposed that it represents snow falling in all its whiteness upon a jetty surface.

**SNOWDON**, a celebrated mountain of the county of Caernarvon, Wales, remarkable for the extent of the ridge of hills with which it is connected and forms the summit. The whole of these mountains take the name of Snowdon, and extend to the confines of Merionethshire. By the Welsh they are called the mountains of Eryri, and, according to an ancient proverb, were considered to be so extensive and productive as to be capable of yielding sufficient pasture for all the herds in Wales, if collected together. Camden says that—‘they may be properly termed the British Alps; for, besides their great height, they are also no less inaccessible, by reason of the steepness of their rocks, than the Alps themselves; and they all encompass one hill, which, far exceeding the rest in height, does so tower its head aloft, that it seems, I shall not say to threaten the sky, but to thrust its summit into it. It harbours snow continually, being throughout the year covered with it, or rather with a hardened crust of snow; and hence the British name of Craig Eryri, and the English one of Snowdon.’ The highest peak of Snowdon is elevated, according to the trigonometrical survey, 3571 feet above the level of the sea. But this is still nearly 2000 feet below the line of perpetual snow. The snow, however, begins to fall in November, and is seldom melted till the middle of June. Snowdon, though the highest mountain in Wales, is far from being the most picturesque in its form. Cader Iris, Molwyn, and Arran, in North Wales, and Cader Arthur, near Brecknock, present a much bolder outline. The usual mode of ascent is by Llyn Cawelllyn, about midway between Beddgelert and Caernarvon. The view from the summit is beyond measure grand and extensive; and in a clear day, and when the mountain is free of clouds, which, however, is but seldom the case, the eye can trace the hills of Scotland, with part of the coast, the high mountains of Westmoreland and Cumberland, and some of the hills of Lancashire; even the county of Wicklow is on some occasions partly visible,

and the whole of the Isle of Man. This mountain was held sacred by the ancient Britons.

**SNUB**, *n. s. & v. a.* Rather snib. See SNEAP, SNEE, SNIB. A jag; a knot in wood; to check; reprimand; nip.

Lifting up his dreadful club on high,  
All armed with ragged snubs, and knotty grain,  
Him thought at first encounter to have slain.

*Faerie Queene.*

Near the sea-shores, the heads and boughs of trees run out far to landward; but toward the sea are so snubbed by the winds, as if their boughs had been pared or shaven off. *Ray on the Creation.*

**SNUDGE**, *v. n.* Dan. *sniger*. To lie idle, close, or snug.

Now he will fight it out, and to the wars;  
Now eat his bread in peace,  
And smudge in quiet; now he scorns increase;  
Now all day spares.

*Herbert.*

**SNUFF**, *v. a., v. n. & n. s.* Belg. *snuffen*

**SNUFF-BOX**, *n. s.* } (which is also used  
**SNUFFERS**, } metaphorically for a  
**SNUF-FLE**, *v. n.* } sneer; Swed. *snuf-va*.

To draw in with the breath; scented; take off the consumed part of a candle: to snort; sniff in contempt; sneer: the mucus of the nose (ob-solete): hence the powdered tobacco taken into the nose; the excrescence or refuse of a candle; a contemptuous sneer: the snuffbox and snuffers are sufficiently known: to snuffle (Belg. *snuffelen*) is to speak through the nose.

Ye said, what a weariness is it, and ye have snuffed at it. *Mal. ii. 13.*

A water-spaniel came down the river, shewing that he hunted for a duck; and, with a snuffling grace, disdaining that his smelling force could not as well prevail through the water as through the air, waited with his eye to see whether he could espy the duck's getting up again. *Sidney.*

To hide me from the radiant sun, and solace  
I' the dungeon by a snuff. *Shakspeare. Cymbeline.*

The late queen's gentlewoman!  
To be her mistress' mistress.  
This candle burns not clear: 'tis I must snuff it,  
And out it goes. *Id. Henry VIII.*

What hath been seen  
Either in snuffs or packings of the duke's,  
Or the hard rain which both of them have borne  
Against the old kind king. *Id. King Lear.*

My snuff and loathed part of nature should  
Burn itself out. *Id.*

A heifer will put up her nose, and snuff in the air,  
against rain. *Bacon.*

But dearest heart, and dearer image, stay!  
Alas! true joys at best are dreams enough:

Though you stay here, you pass too fast away;  
For even at first life's taper is a snuff. *Donne.*

If the liquor be of a close and glutinous consistency, it may burn without any snuff; as we see in camphire, and some other bituminous substances; and most of the ancient lamps were of this kind, because none have been found with such wicks. *Wilkins.*

Against a communion-day our lamps should be  
dressed, our lights snuffed, and our religion more ac-  
tive. *Taylor.*

With delight he snuffed the smell  
Of mortal change on earth. *Milton's Paradise Lost.*

Bagpipes of the loudest drones,  
With snuffling broken-winded tones,  
Whose blasts of air, in pockets shut,  
Sound filthier than from the gut. *Hudibras.*

He *snuff* the wind, his heels the sand excite  
But, when he stands collected in his might,  
He roars, and promises a more successful fight.

Dryden.

For thee the bulls rebeallow through the groves,  
And tempt the stream, and *snuff* their absent loves.

Id.

**One clad in purple**

Eats, and recites some lamentable rhyme,  
Some senseless Phillis in a broken note,

*Snuffing* at nose, and croaking in his throat. Id.

Jupiter took *snuff* at the contempt, and punished him: he sent him home again. L'Estrange.

It came to the ape to deliver his opinion, who smelt, and *snuffed*, and considered on't. Id.

Says Humpus, Sir, my master bad me pray Your company to dine with him to-day:

He *snuffs*, then follows, up the stairs he goes; Never pulls off his hat, nor cleans his shoes. King.

My troops are mounted; their Numidian steeds Snuff up the wind, and long to scour the desert.

Addison.

A torch, *snuff*, and all, goes out in a moment, when dipped into the vapour. Id. on Italy.

O'er all the blood-hound boasts superior skill,  
To scent, to view, to turn, and boldly kill!  
His fellows vain alarms rejects with scorn,  
True to the master's voice, and learned horn:  
His nostrils oft, if ancient fame sing true,  
Trace the sly felon through the tainted dew:  
Once *snuffed*, he follows with unaltered aim,  
Nor odours lure him from the chosen game;  
Deep-mouthed he thunders, and inflamed he views,  
Springs on relentless, and to death pursues. Tickel.

Just where the breath of life his nostrils drew,  
A charge of *snuff* the wily virgin threw;  
The gnomes direct, to every atom just,  
The pungent grains of titillating dust. Pope.

Sir Plume, of amber *snuff* box justly vain,  
And the nice conduct of a clouded cane. Id.

When you have *snuffed* the candle, leave the *snuffers* open. Swift's Directions to the Butler.

My nag's greatest fault was *snuffing* up the air about Brackdonstown, whereby he became such a lover of liberty that I could scarce hold him in. Swift.

You have got

An office for your talents fit,  
To *snuff* the lights, and stir the fire,  
And get a dinner for your hire. Id.

If a gentleman leaves a *snuff box* on the table, and goeth away, lock it up as part of your vails. Id.

**SNUFF** is chiefly made of tobacco, other matters being only added to give it a more agreeable scent, &c. The kinds of snuff, and their several names are innumerable, and new ones are daily invented; so that it would be difficult to give a detail of them. We shall only say that there are three principal sorts; the first granulated; the second an impalpable powder; and the third the bran, or coarse part remaining after sifting the second sort. 'Every professed, inveterate, and incurable snuff-taker,' says lord Stanhope, 'at a moderate computation, takes one pinch in ten minutes. Every pinch, with the agreeable ceremony of blowing and wiping the nose, &c., consumes a minute and a half. One minute and a half out of every ten, allowing sixteen hours to a snuff-taking day, amounts to two hours and twenty-four minutes a day, or one day out of every ten. This amounts to thirty-six days and a half in a year. Hence, if the practice be persisted in forty years, two entire years of the

snuff-taker's life will be dedicated to tickling his nose, and two more to blowing it. On calculating the expense of snuff, snuff-boxes, and handkerchiefs, it will appear that this luxury encroaches as much on the income of the snuff-taker as it does on his time; and that, by a proper application of the time and money thus lost to the public, a fund might be constituted for the discharge of the national debt.' See NICOTIANA.

**SNUG**, *v. n. & adj.* or *Dan. snog; Belg. SNUGGLE.* *sniger.* To lie close or unnoticed: the adjective corresponding.

There *snuggling* well, he well appeared content,  
So to have done amiss, so to be shent. Sidney.

Did I not see you, rascal! did I not,  
When you lay *snug*, to snap young Damon's goat? Dryden.

As the loving couple lay *snuggling* together, Venus, to try if the cat had changed her manners with her shape, turned a mouse loose into the chamber. L'Estrange.

They spied a country farm,  
Where all was *snug*, and clean, and warm;  
For woods before, and hills behind,  
Secured it both from rain and wind. Prior.

At Will's

Lie *snug*, and hear what criticks say. Swift.

**SNYDERS**, or **SNEYDERS** (Francis). A celebrated painter, was born in 1579 at Antwerp, where he became a disciple of Henry Van Balen. His first subjects were fruits and still life; but afterwards his genius prompted him to paint animals, in which line he surpassed all his contemporaries. He studied nature accurately, and his objects were copied with equal exactness and judgment. It has been said that he went to Italy, and improved himself there by the works of Castiglione, which is palpably erroneous; for Snyders was an old man when that artist began to be known. The probability is, that Snyders never was out of his own country, being constantly employed at Antwerp and Brussels, in the numerous commissions which he received. His usual subjects were hunttings, and combats of wild beasts; also kitchens, with fruit and vegetables, and dead game. Every animal had an expression suitable to the species or situation; the landscape was always designed in a fine taste, and the whole composition was admirable. When his designs required figures of a larger size they were generally inserted by Rubens or Jordaens, which gave an additional value to his works. His touch is light, yet firm; his style of composition rich, and full of variety; his coloring remarkable for truth, nature, warmth, and force; his animals are designed in a grand taste, their actions, attitudes, and all their motions, having life, spirit, and expression; and he was so exact that he gave the appearance of reality to the skin and hair. The archduke Albert, governor of the Netherlands, appointed Snyders his principal painter; the king of Spain adorned his palaces with several of his hunting pieces, and so did the elector palatine. Rubens, though he painted animals and landscapes so well himself, employed Snyders frequently to paint the backgrounds of his pictures, as also did Jordaens. This artist etched sixteen plates of animals in a

masterly style; but they are, like his pictures, very rare. He died at Antwerp in 1657.

**SO, adv.** Sax. *ræ, rpa*; Belg. *soo*; Teut. and Goth. *so*. There is also a Hindoo *so*, and Pers. *sa*. In like manner; in such a manner; thus. It answers to *as*, either preceding or following; noting comparison; provided that; often a mere expletive: at other times *so* returns the sense of a word or sentence going before, and is used to avoid repetition: as, ‘the two brothers were valiant, but the eldest was more *so*;’ that is, ‘more valiant.’ The French article *le* is often used in the same manner.. Johnson truly says, this mode of expression is not to be used but in familiar language, nor even in that to be commended.

Why is his chariot *so* long in coming?  
*Judges v. 28.*

The god, though loth, yet was constrained t' obey:  
For longer time than that no living wight  
Below the earth might suffer'd be to stay.  
So back again him brought to living light.

*Faerie Queene.*  
Ready are the' appellant and defendant,  
The armourer and his man, to enter the lists;  
*So* please your highness to behold the fight.

*Shakspeare.*  
There is Percy; if your father will do me any honour, *so*; if not, let him kill the next Percy himself.

I would not have thee linger in thy pain:  
*Id. Othello.*

So then the Volscians stand but as at first,  
Ready, when time shall prompt them, to make road  
Upon's again.

*Id. Coriolanus.*

When

With wild wood-leaves and weeds I ha' strewed his grave,  
And on it said a century of prayers,  
Such as I can, twice o'er, I'll weep and sigh;  
And, leaving *so* his service, follow you.

*Shakspeare.*

O, *so*, and had you a council  
Of ladies too? Who was your speaker, Madam?

*Ben Jonson's Catiline.*

Can nothing great, and at the height,  
Remain *so* long, but its own weight  
Will ruin it? Or is't blind chance

That still desires new states t' advance?

*Id.*

There's no such thing as that we beauty call,  
It is meer cosenage all;  
For though some long ago  
Liked certain colours mingled *so* and *so*,  
That doth not tie me now from chusing new.

*Suckling.*

If he set industriously and sincerely to perform the commands of Christ, he can have no ground of doubting but it shall prove successful to him; and *so* all that he hath to do is to endeavour by prayer, and use of the means, to qualify himself for this blessed condition.

*Hammond's Fundamentals.*

It leaves instruction, and *so* instructors, to the so-briety of the settled articles and rule of the church.

*Holyday.*

The fat with plenty fills my heart,  
*Cowley.*

The lean with love makes me too *so*.

Who thinks his wife is virtuous, though not *so*,  
Is pleased and patient till the truth he know.

*Denham,*

Not to admire is all the art I know  
To make men happy, and to keep them *so*.

*Creech's Horace.*

As whom the fables feign of monstrous size,  
Titanian or earthborn, that warred on Jove,  
So stretched out huge in length the arch fiend lay.

*Milton.*

So frowned the mighty combatants, that hell  
Grew darker at their frown.

*Id.*

Of such examples add me to the roll;  
Me easily indeed mine may neglect,  
But God's proposed deliverance not *so*.

*Id.*

Be not sad:  
Evil into the mind of God or man  
May come and go, *so* unapproved, and leave  
No spot or blame behind.

*Id. Paradise Lost.*

Amoret, my lovely foe,  
Tell me where thy strength does lie,  
Where the power that charms us *so*,

*Waller.*

In thy soul, or in thy eye?  
It concerns every man, with the greatest seriousness, to enquire into those matters, whether they be *so* or not.

*Tillotson.*

There is something equivalent in France and Scotland; *so* as 'tis a very hard calumny upon our soil to affirm that *so* excellent a fruit will not grow here.

*Temple.*

Since then our Arcite is with honour dead,  
Why should we mourn that he *so* soon is freed.

*Dryden.*

O goddess! tell what I would say,  
Thou know'st it, and I feel too much to pray;  
So grant my suit, as I enforce my might,  
In love to be thy champion.

*Dryden's Knight's Tale.*

He was great ere fortune made him *so*.

*Dryden.*

How sorrow shakes him!

So, now the tempest tears him up by the roots,  
And on the ground extends the noble ruin.

*Id.*

So *so*; it works; now, mistress, sit you fast.

*Id.*

We may be certain that man is not a creature that hath wings; because this only concerns the manner of his existence; and we, seeing what he is, may certainly know that he is not *so* or *so*.

*Locke.*

I shall minutely tell him the steps by which I was brought into this way, that he may judge whether I proceeded rationally, if *so* be any thing in my example worth his notice.

*Id.*

Whether this be from an habitual motion of the animal spirits, or from the alteration of the constitution by some more unaccountable way, this is certain, that *so* it is.

*Id.*

According to the multifariousness of this immutability, *so* are the possibilities of being.

*Norris.*

I viewed in my mind, *so* far as I was able, the beginning and progress of a rising world.

*Burnet's Theory of the Earth.*

One may as well say that the conflagration shall be only national, as to say that the deluge was *so*.

*Burnet.*

Here then exchange we mutually forgiveness:

*So* may the guilt of all my broken vows,  
My perjuries to thee, be all forgotten;

*As* here my soul acquits thee of my death,

*As* here I part without an angry thought.

*Rowe.*

Too much of love thy hapless friend has proved,

Too many giddy foolish hours are gone;

May the remaining few know only friendship:

*So* thou, my dearest, truest, best Alicia,

Vouchsafe to lodge me in thy gentle heart,

A partner there; I will give up mankind.

*Id.*

Upon our first going into a company of strangers,

our benevolence or aversion rises towards several particular persons, before we have heard them speak, or so much as know who they are.

*Addison's Spectator.*

I laugh at every one, said an old cynick, who laughs at me. Do you so? replied the philosopher; then you live the merriest life of any man in Athens.

*Addison.*

They are beautiful in themselves, and much more so in the noble language peculiar to that great poet.

*Id.*

So the doctrine be but wholesome and edifying, though there should be a want of exactness in the manner of speaking or reasoning, it may be overlooked.

*Attcherbury.*

An astringent is not quite so proper, where relaxing the urinary passages is necessary.

*Arbuthnot.*

Deliver us from the nauseous repetition of as and so, which some so so writers, I may call them so, are continually sounding in our ears.

*Felton on the Classicks.*

No nation ever complained they had too broad, too deep, or too many rivers; they understand better than so how to value those inestimable gifts of nature,

*Bentley.*

Fired at first sight with what the muse imparts, In fearless youth we tempt the heights of arts; So pleased at first the towering Alps we try, Mount o'er the vales, and seem to tread the sky.

*Bentley.*

As into air the purer spirits flow, And separate from their kindred dregs below, So flew her soul to its congenial place.

*Id.*

So much as you admire the beauty of his verse, his prose is full as good.

*Id.*

The blest to-day is as completely so, As who began a thousand years ago.

*Id.*

As a war should be undertaken upon a just motive, so a prince ought to consider the condition he is in when he enters on it.

*Swift.*

Common-place books have been long used by industrious young divines, and still continue so.

*Id.*

DOGE. You shall be so; Thus much they cannot well deny.

*Byron.*

SOAP, *v. n. & v. a.* Sax. *rocan.* To lie steeped in moisture; incarceate by moisture; drain; exhaust.

Their land shall be soaked with blood.

*Isa. xxxiv. 7.*

For thy conceit in soaking will draw in More than the common blocks.

*Shakspeare.*

Many of our princes Lie drowned and soaked in mercenary blood: So do our vulgar drench their peasant limbs In blood of princes.

*Id. Henry V.*

Lay a heap of earth in great frosts upon a hollow vessel, putting a canvass between, and pour water upon it, so as to soak through: it will make a harder ice in the vessel, and less apt to dissolve than ordinarily.

*Bacon.*

Plants that draw much nourishment from the earth, and soak and exhaust it, hurt all things that grow by them.

*Id.*

So deep did it (sin) stick in the very grain of the earth, that God saw it meet to let it soak long under the waters.

*Bp. Hall.*

A greater sparer than a saver; for, though he had such means to accumulate, yet his forts, and his garrisons, and his feastings, wherein he was only sumptuous, could not but soak his exchequer.

*Wotton.*

There deep Galesus soaks the yellow sands.

*Dryden.*

Thou, whose life's a dream of lazy pleasure, 'Tis all thy business, business how to shun; To bask thy naked body in the sun, Suppling thy stiffened joints with fragrant oil; Then in thy spacious garden walk a while, To such the moisture up and soak it in.

*Id.*

Let a drunkard see that his health decays, his estate wastes, yet the habitual thirst after his cups drives him to the tavern, though he has in his view the loss of health and plenty; the least of which he confesses is far greater than the tickling of his palate with a glass of wine, or the idle chat of a soaking club.

*Locke.*

Wormwood, put into the brine you soak your corn in, prevents the birds eating it.

*Mortimer.*

Rain, soaking into the strata which lie near the surface, bears with it all such moveable matter as occurs.

*Woodward.*

SOAP, *n. s.* } *Sax. rape; Lat. sapo.* A

SOAP-BOILER. } substance used in washing, made commonly of a lixivium of vegetable alkaline ashes and some unctuous substance. See below. The soapboiler is the manufacturer of this useful article.

He is like a refiner's fire, and like fullers' soap.

*Malachi.*

Soap-ashes are much commended, after the soap-boilers have done with them, for cold or sour lands.

*Mortimer.*

As rain-water diminishes their salt, so the moistening of them with chamber-lee or soap-suds adds thereto.

*Id.*

A soapboiler condoles with me on the duties on castle-soap.

*Addison's Spectator.*

A bubble blown with water, first made tenacious by dissolving a little soap in it, after a while will appear tinged with a great variety of colors.

*Newton's Opticks.*

Soap-earth is found in great quantity on the land near the banks of the river Hermus, seven miles from Smyrna.

*Woodward.*

Soap is a mixture of a fixed alkaline salt and oil; its virtues are cleansing, penetrating, attenuating, and resolving; and any mixture of any oily substance with salt may be called a soap.

*Arbuthnot on Aliments.*

SOAP is a composition of caustic fixed alkaline salt, and oil, sometimes hard and dry, sometimes soft and liquid; much used in washing and whitening linens, and by dyers and fullers. Soap may be made by several methods, which, however, all depend upon the same principle. The soap which is used in medicine is made without heat. See CHEMISTRY, index.

In manufactures, where large quantities of it are prepared, soap is made with heat. A lixivium of quicklime and soda is made, but it is less concentrated than that above referred to, and only so much that it can sustain a fresh egg. A part of this lixivium is even to be diluted and mixed with an equal weight of oil of olives. The mixture is to be put on a gentle fire, and agitated, that the union may be accelerated. When the mixture begins to unite well, the rest of the lixivium is to be added to it; and the whole is to be digested with a very gentle heat, till the soap be completely made. A trial is to be made of it, to examine whether the just proportion of oil and alkali has been observed. Good soap of this kind ought to be firm, and very white when cold; not subject to become moist by exposure to air, and entirely miscible with pure water, to

which it communicates a milky appearance, but without any drops of oil floating on the surface. When the soap has not these qualities, the combination has not been well made, or the quantity of salt or of oil is too great, which faults must be corrected. In soft or liquid soaps, green or black soaps, cheaper oils are employed, as oil of nuts, of hemp, of fish, &c. These soaps, excepting in consistence, are not essentially different from white soap. Fixed alkalies are much disposed to unite with oils that are not volatile, both vegetable and animal, for this union can be made even without heat. The compound resulting from it partakes at the same time of the properties of oil and of alkali; but these properties are modified and tempered by each other, according to the general rule of combinations. Alkali formed into soap has not nearly the same acrimony as when pure; it is even deprived of almost all its causticity, and its other saline alkaline properties are almost entirely abolished. The oil contained in soap is less combustible than when pure, from its union with the alkali, which is an uninflammable body. It is miscible, or even soluble in water to a considerable degree, by means of the alkali. Soap is entirely soluble in spirit of wine; and still better in aqua-vitæ sharpened by a little alkaline salt, according to Mr. Geoffroy. The manufacture of soap in London first began in 1524; before which time the city was served with white soap from foreign countries, and with gray soap speckled with white from Bristol, which was sold for a penny a pound, and also with black soap; which sold for a halfpenny the pound. The principal soaps of our own manufacture are the soft, the hard, and the ball soap. The soft soap is either white or green. When oil unites with alkali, in the formation of soap, it is little altered in the connexion of its principles; for it may be separated from the alkali by decomposing soap with any acid, and may be obtained nearly in its original state.

*An acid soap* is formed by the addition of concentrated acids to the expressed oils. Thus the oil is rendered partially soluble in water; but the union is not sufficiently complete to answer any valuable purpose.

*The ball soap*, commonly used in the north, is made with leys from ashes and tallow. The leys are put into the copper, and boiled till the watery part is quite gone, and there remains nothing in the copper but a sort of saline matter (the very strength or essence of the ley); to this the tallow is put, and the copper is kept boiling and stirring for above half an hour, in which time the soap is made; and then it is put out of the copper into tubs or baskets with sheets in them, and immediately (whilst soft) made into balls. It requires nearly twenty-four hours in this process to boil away the watery part of the ley.

The chief ingredients in *green soft soap* used in making this are leys drawn from potash and lime, boiled with tallow and oil. First, the ley of a proper degree of strength (which must be estimated by the weight of the liquor) and tallow, are put into the copper together, and as soon as they boil up, the oil is added; the fire is then damped or stopped up, while the ingredients re-

main in the copper to unite; when they are united, the copper is again made to boil, being filled with leys as it boils, till there be a sufficient quantity put into it; then it is boiled off and put into casks. When the soap is first made it appears uniform; but in about a week the tallow separates from the oil into those white grains which we see in the common soap. Soap thus made would appear yellow, but by a mixture of indigo, added at the end of the boiling, it is rendered green.

*Hard soap* is made with leys from ashes and tallow, and is most commonly boiled twice; the first, called the half-boil, has the same operation as the first half-boil of soft white soap. Then the copper is charged with fresh leys again, and the first half-boil put into it, where it is kept boiling, and fed with leys as it boils, till it grains or is boiled enough; then the ley is discharged from it, and the soap put into a frame to cool and harden. Common salt is made use of for the purpose of graining the soap; for when the oil or tallow has been united with the ley, after a little boiling, a quantity of salt is thrown into the mass, which dissolving readily in water, but not in the oil or tallow, draws out the water in a considerable degree, so that the oil or tallow united with the salt of the ley swims on the top. When the ley is of a proper strength, less salt is necessary to raise the curd when it is too weak. There is no certain time for bringing off a boiling of any of these sorts of soap; it frequently takes up part of two days.

Alkaline soaps are very useful in many arts and trades, and also in chemistry and medicine. Their principal utility consists in a deterersive quality that they receive from their alkali, which is capable of acting upon oily matters, and of rendering them saponaceous and miscible with water. Hence soap is very useful to cleanse any substances from all fat matters with which they are soiled. Soap is therefore daily used for washing linen and woollen cloths from oil, and for whitening silk, and freeing it from the resinous varnish with which it is covered. Pure alkaline lixiviums might be employed for the same purposes; but when their activity is not mitigated by the oil, as it is in soap, they are capable of altering, and even of destroying entirely by their causticity, most substances, especially animal matters, as silk, wool, &c., whereas soap cleanses from oil almost as effectually as pure alkali, without altering or destroying the stuff.

Soap was imperfectly known to the ancients. It is mentioned by Pliny as made of fat and ashes, and as an invention of the Gauls. Aretæus says that the Greeks obtained their knowledge of its medical use from the Romans. Its virtues, according to Bergius, are detergent, resolvent, and aperient, and its use recommended in jaundice, gout, calculous complaints, and in obstructions of the viscera. The efficacy of soap in jaundice was experienced by Sylvius, and recommended by various authors; and it was thought of use in supplying the place of bile in the primæ viæ. But it has lost much of its reputation in jaundice, since it is now known that gall stones have been found in many after death, who had been daily taking soap for months and

even years. Of its good effects, in urinary calculous affections, we have the testimony of several, especially when dissolved in lime water, by which its efficacy is considerably increased : for it thus becomes a powerful solvent of mucus, which an ingenious modern author supposes to be the chief agent in the formation of calculi ; it is, however, only in the incipient state of the disease that these remedies promise effectual benefit ; though they generally abate the more violent symptoms where they cannot remove the cause. With Boerhaave soap was a general medicine ; for, as he attributed most complaints to viscosity of the fluids, he, and most of the Boerhaavian school, prescribed it, in conjunction with different resinous and other substances, in gout, rheumatism, and various visceral complaints. Soap is also externally employed as a resolvent, and gives name to several officinal preparations. From its properties soap must be a very effectual and convenient anti-acid. It absorbs acids as powerfully as pure alkalies and absorbent earths, without saving the causticity of the former, and without oppressing the stomach by its weight like the latter. Soap must also be one of the best of all antidotes to stop quickly, and with the least inconvenience, the bad effects of acid corrosive poisons, as aquafortis, corrosive sublimate, &c.

Concerning the *chemical constitution* of soaps and saponification, no exact ideas were entertained prior to M. Chevreul's researches.

Fats are compounds of a solid and a liquid substance ; the former called stearine, the latter resembling vegetable oil, and therefore called elaine. When fat is treated with a hot ley of potash, or soda, the constituents react on one another, so as to generate the solid pearly matter margaric acid, and the fluid matter oleic acid, both of which enter into a species of saline combination with the alkali ; while the third matter that is produced, the sweet principle, remains free. We must therefore regard our common soap as a mixture of an alkaline margarate and oleate, in proportions determined by the relative proportions of the two acids producible from the peculiar species of fat. It is probable, on the other hand, that the soap formed from vegetable oil is chiefly an oleate. No chemical researches have hitherto been made known, on the compounds of resin with alkalies, though these constitute the brown soaps so extensively manufactured in this country. All oils or fats do not possess in an equal degree the property of saponification. Those which saponify best, according to D'Arcet senior, Lelievre, and Pelletier, are, 1. Oil of olives, and of sweet almonds. 2. Animal oils ; as hog's-lard, tallow, butter, and horse-oil. 3. Oil of colza, or rape-seed oil. 4. Oil of beech-mast and poppy-seed, when mixed with olive-oil or tallow. 5. The several fish-oils, mingled like the preceding. 6. Hempseed-oil. 7. Nut-oil and linseed-oil. 8. Palm-oil. 9. Resin. In general, the only soaps employed in commerce are those of olive-oil, tallow, lard, palm-oil, and resin. A species of soap can also be formed by the union of bees'-wax with alkali ; but this has no detergent application, being used only for painting in encausto.

I shall first describe, says Dr. Ure in his valuable Chemical Dictionary, the fabrication of olive-oil soap : 'To this oil there is usually added one-fifth of that of rape-seed ; without which addition the section of the soap would not be sufficiently smooth and uniform, but clotty, and unprofitable to the retailer. 100 parts of olive-oil consist, according to Chevreul, of seventy-two parts of elaine, and twenty-eight of stearine ; while 100 parts of rape-seed oil consist of fifty-four elaine, and forty-six of stearine. Since, however, the prime equivalents of the margaric and oleic acids, which result from the above two principles, are nearly the same, that of the former being about thirty-four and of the latter thirty-six, it does not seem necessary to consider, in a chemical point of view, the proportions of the two oils. Besides the oils, the matters employed in the manufacture of this soap are, first, the soda (barilla) of commerce, of good quality, that is, containing from thirty to thirty-six per cent. of dry carbonate ; secondly, quicklime ; thirdly, water. 100 parts of oil require about fifty-four parts of the best barilla for saponification ; and three parts of the barilla require one of quicklime. After bruising the soda, and slaking the lime, they are mingled, and a certain quantity of cold water is poured upon the mixture. At the end of twelve hours, the liquor is allowed to run off. It is called the first ley, and marks from 20° to 25° on the hydrometer of Baumé (specific gravity 1·16 to 1·21). On treating the residuum twice with fresh water, to exhaust it, two other leys are obtained : the one from 10° to 15° (specific gravity 1·072 to 1·114) ; the other from 4° to 5° (specific gravity 1·027 to 1·036). When the manufacturer has laid in a stock of leys, of different densities, he engages in the soap-boiling. For this purpose he employs boilers (caldrons) which vary much in their construction, and which may contain from 5000 lbs. to 2500 lbs. of soap. In all cases, they have at their bottom a pipe two inches and two-thirds in diameter, called the thorn (epine).

'They begin by putting weak ley into the boiler ; they then pour in gradually the oil, and boil the mixture. The combination is soon effected, forming a species of emulsion : they temper the fire, and add successively weak ley and oil, taking care to maintain the mass in a homogeneous pasty state, without ley at the bottom or oil on the surface, in order to accelerate the combination. When they have thus put into the boiler all the oil which they wish to saponify, they add to it slowly some strong ley, which completes the saturation of the oil, converting the emulsion, with an oily excess, into a perfect soap, which separates from the ley, and which collects upon the surface.

'Whenever this phenomenon occurs, the ley, although very abundant, is no longer fit for saponification ; there is now present in it only some neutral salts, carbonate of soda, and a little caustic soda, unabsorbed. For this reason, when the fire has been allowed to fall, they withdraw the ley by the pipe, so as to leave the soap nearly dry. Fresh leys are now added, which are caustic and concentrated ; and the fire is rekindled. Thus there is poured into the boiler

more caustic ley than is required to saturate the oil; the mixture is then boiled, to leave no doubt of the saturation of the oil with alkali; and the ebullition is stopped when the ley has attained a specific gravity of 1·15 or 1·2. This ley, over which the soap floats, is next withdrawn, like the preceding, and the soap is left dry at the bottom of the boiler. In this state, the soap is of a deep blue color, bordering on black, and contains only sixteen per cent. of water. This color proceeds from a combination of the oil, alumina, and hydrosulphuret of iron, which is formed during the pasty process, and which dissolves in the soap. The alumina is derived from the furnaces in which the soda is fabricated, and gets dissolved in it during the lixiviation. The sulphured hydrogen comes from the hydrosulphuret of soda contained in the ley, and is set at liberty the moment that the paste or glue is made. As to the oxide of iron, it proceeds from the materials employed, or from the hearth of the furnace, or from the plant itself, when native barilla is employed. This oxide of iron is held in solution by the hydrosulphuret of soda. When the leys do not contain enough of oxide of iron to color the aluminous soap into a fine blue, they add to the boiling a sufficient quantity of iron, which is done by sprinkling in a solution of copperas, after the pasty operation. At any rate, it appears that the oil unites almost immediately with the alumina and the oxide of iron; that there thence results a yellowish alumino-ferruginous soap, and that it is only by the heat of ebullition that this soap acquires the blue color. The soap made by the above process may be converted either into white or marbled soap. To convert it into white soap, we must mingle it gradually with dilute leys, with a gentle heat, and allow deposition to take place, with a covered boiler. The blackish alumino-ferruginous soap, not being soluble in the soda-soap at this temperature, separates from it, and falls to the bottom of the boiler. The soap-paste, which has become perfectly white, is now taken out, and run into the wooden frames, where it becomes hard on cooling. From these it is finally removed, and cut into bars.

This soap is known in France under the name of soap in tables (savon en table). According to M. Thenard, it consists of,

Soda . . . . .	4·6
Fat matter . . . . .	50·2
Water . . . . .	45·2
<hr/>	
	100·0

According to M. D'Arcet's analysis, as reported to me by M. Clement, Marseilles white soap is composed of,

Soda . . . . .	6
Oil . . . . .	60
Water . . . . .	34
<hr/>	
	100

By my experiments on that soap, the quantity of soda in it is from 6 to 6·5 per cent. This soap is preferred for delicate purposes; as the washing of lace, and for dyeing; because, having been

edulcorated with very weak leys, and purified by subsidence and decantation, it contains no excess of alkali, nor any foreign body. It is hence much smoother and milder than the marbled soap, of which we are now to treat.

When the soap-boiling is finished, and when the ley over which it swims has acquired a specific gravity of from 1·15 to 1·20, the soap is of a blackish-blue color, as we have said above. In this state, if, instead of wishing to make table soap, we desire to make the marbled kind, we pursue the following plan:—

We have seen that the soap contains then but sixteen per cent. of water, and that the entire mass has a dark color. We must add water to supply the deficiency, in order that the coloring matters be separated from the white paste, and that it may unite into veins of greater or less size, so as to form a species of blue marbling, in a white basis. The separation of this body may be compared to a species of crystallisation. For its proper production, the soap must be suitably diluted, and it must not be allowed to cool either too slowly or too quickly. If it be too much diluted, and if it cool too slowly, we obtain only a white soap, the whole marbling falling to the bottom. In the opposite case, it is entirely in little grains, like a mass of granite.

This process is founded, we perceive, on the smaller solubility of the alumino-ferruginous soap at a low temperature; and on the property which the solution possesses of not being able to retain it, and of separating from it at a certain density.

At all events, whenever there is added to the boiling a suitable quantity of weak ley, to bring it to the desired point, this soap is run into the frames in the same way as the white soap, and is taken out after cooling to be cut into bars. The frames or boxes, for cooling the soap, are either wooden boxes with moveable sides fixed by wedges, or are stone troughs jointed with cement. The platform on which they rest must be so constructed, as to allow the ley to run off into a reservoir. This mottled soap is always harder and more uniform in its proportions than the white table-soap. In fact, the production of the marbling does not permit the manufacturer to vary the quantity of the water; for this depends on the marbling. White table-soap, on the contrary, may receive as much water as the manufacturer shall desire, and it is even the whiter the more water it contains. It thence appears that the marbled soap deserves a preference.

Some years ago, continues our author, I analyzed the foreign Castile soap, as also an imitation of it made in London. The first had a specific gravity of 1·0705. It consisted of,

Soda . . . . .	9·0
Well dried oily matter . . . . .	76·5
Water with a little coloring matter	14·5
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	100·0

The specific gravity of the second was only 0·9669; for it remained at rest in any part of a dilute alcohol of that density. Its composition was,

Soda . . . . .	10·5
Pasty consistence and fat . . .	75·2
Water with the coloring matter . . .	14·3
<hr/>	
	100·0

'The difference of density probably arose partly from a higher specific gravity of the oil, and partly from the greater chemical condensation of the soapy particles in the foreign marbled soap, usually called Castile soap by the apothecaries. Both of the above soaps were very dry.

Berry's white soap yielded me,

Soda . . . . .	8
Fatty matter . . . . .	75
Water . . . . .	17
<hr/>	
	100

Glasgow best white soap,

Soda . . . . .	6·4
Tallow . . . . .	60·0
Water with a little muriate of soda . . . . .	33·6
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	100·0

Brown or resin-soap (Glasgow),

Soda . . . . .	6·5
Resin and fat . . . . .	70·0
Water . . . . .	23·5
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	100·0

'I have since examined several of the common white soaps. The average of soda per cent. is about five, from which their detergent quality may be inferred to be considerably inferior to the preceding soaps, which were all carefully manufactured. The soap lately imported from India, when freed from the soda powder on its surface, yields less than five per cent. of combined soda, and is hence not so powerful a detergent as many of the common soaps of this country. It is, moreover, highly charged with muriate of soda. The composition of a good soft, or potash soap, made by a respectable manufacturer in Glasgow, was as follows:—

Potash . . . . .	9
Fat . . . . .	43·7
Water . . . . .	47·3
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	100·0

Here the equivalent proportions are no longer observed. As we may estimate the mean atomic weight of the oleic and margaric acids at 35, or ten times that of lime (oxygen being 1), we see that 9 of potash should take 52·5 of fat, instead of 43·7: 6 of soda (equivalent to nine of potash) in a hard soap, will indicate in like manner 52·5 of fat. I consider this proportion to be that of good soap, such as the best Marseilles; but we shall generally find, I believe, somewhat less than 5 in 100 parts of our soaps of commerce, sometimes only 4·5; and hence such soaps may be estimated at—

Soda . . . . .	5·00 or 4·5
Fat . . . . .	43·75 39·4
Water and muriate of soda . . . . .	51·25 56·1
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	100·00 100·0

There are debased soaps, however, of which the pretended snow-soap is the most remarkable,

that contain far less of the real saponified compound than the above. It is the practice of some persons to keep the soap in strong brine, after it has been charged with a large dose of common salt. Such adulterations should be detected, and their authors exposed. My alkalimeter, noticed in the introduction, will enable any person, however little skilled in chemistry, to ascertain in a few minutes the detergent or washing quality of any soap.'

The specific gravity of soap is in general greater than that of water. Its taste is faintly alkaline. When subjected to heat, it speedily fuses, swells up, and is then decomposed. Exposed to the air, in thin slices, it soon becomes dry; but the whole combined water does not leave it, even by careful desiccation on a sand bath. Thus 100 parts of Berry's cake soap, analyzed above, loses only twelve per cent.; and 100 of the best Glasgow white soap, only twenty-one. If we suppose good hard soap to consist of 1 prime soda, 1 prime saponified fat, and 20 primes water, we shall have its theoretic composition to be—

Soda . . . . .	4	6·5
Fat . . . . .	35	56·9
Water . . . . .	22·5	36·6
	61·5	100·0

This is probably the true constitution, which may be occasionally modified by the formation of a little suboleate or submargarate, and a slight variation in the quantity of water, either from evaporation, or the presence of a little in excess, not chemically combined. When such soap is desiccated, if it still retains ten atoms of intimately combined water, the proportion of this per cent. will be twenty-two, nearly coinciding with the last of the above results.

Soap is much more soluble in hot than in cold water. This solution is instantly disturbed by the greater number of acids, which, seizing the alkali, either separate the fatty principles, or unite with them into an acido-soapy emulsion. The solution is likewise decomposed by almost all the earthy and metallic salts, which give birth to insoluble compounds of the oleic and margarine acids with the salifiable bases.

Soap is soluble in alcohol; and in large quantity by the aid of heat. When boiling alcohol is saturated with soap, the liquid, on cooling, forms a consistent transparent mass of a yellow color. When this mass is dried, it still retains its transparency, provided the soap be a compound of tallow and soda; and in this state it is sold by the perfumers in this country.

Good soap possesses the property of removing from linen and cloth the greater part of fatty substances which may have been applied to them.

With regard to marbled soaps, Chaptal, in his Chimie Appliquée, says, that it is not till after two days' boiling, that the process of variegation is begun. With this view <sup>the</sup> part of the sulphate of iron, relatively to the oil intended for saponification, is diluted, and decomposed with a weak lixivium. This solution (mixture) is then poured into the caldron, which is kept in a state of ebullition till the paste becomes black;

after which the fire is extinguished, and the lixivium which remains unincorporated is drawn off. When this is done, they rekindle the fire, and supply the paste with ley during twenty-four hours; after which, the fire being put out, the matter is left to settle, and the lixivium drawn off as before. This process is repeated for eight or nine days, at the end of which the fire is removed, and the lixivium evacuated. As soon as the mass has settled, about twelve pounds avoirdupois of Spanish-brown diffused through water are added to it. When this is done, two workmen, stationed on boards set over the caldron, and furnished with long poles, to the extremity of each of which is attached a board about ten inches square, raise up the paste, and agitate it in different directions, while others pour lixivium in at intervals, till the paste be rendered fluid. After this operation the soap is removed into the moulds. The description of the marbling process previously given is taken from Thenard, and seems the more correct, though the above manipulations are no doubt worthy of attention.

We ascertain that soap has attained a due degree of consistence, 1. By allowing a small portion of it to fall and coagulate on a slate. 2. If on shaking a spatula, which has been dipped into the paste, briskly in the air, the soap be detached in the form of ribands, without adhering to the wood. 3. By the peculiar odor of soap, and by handling it between the fingers. At the stage of saponification, when the paste is becoming stiff, and beginning to separate from the aqueous liquor, Messrs. Pelletier, D'Arcet, and Lelievre, advise us, at this period, to throw into the caldron a few pounds of sea-salt, in order to produce a more complete separation; the paste then assumes a grained form, somewhat resembling spoiled cream; the ebullition is maintained during two hours, after which the fire is withdrawn, and the agitation discontinued. When a few hours have elapsed, the liquor which has subsided to the bottom of the caldron, is drawn off by means of the pipe; the fire is rekindled, the soap is dissolved by the aid of a little water poured into the caldron, the mixture is agitated, and when it is completely liquefied, and in a boiling state, the remainder of the first ley (about 1·14 specific gravity) is gradually added to it. In some manufactures, says M. Chaptal, the strongest lixivium (the first) is employed at the commencement of the ebullition; by which method the paste becomes quickly thickened to a considerable degree, and requires to be managed by persons skilled in such operations. It is judged necessary to pour in fresh ley when the paste sinks down, and remains at rest. They continue to employ the strong ley till it be nearly exhausted. Then the boiling subsides, that is, it sinks down, and appears as if stationary. It boils in this quiet manner during three or four hours; after which it is moistened by pouring into it the second lixivium (1·072 to 1·089 specific gravity), while care is at the same time taken progressively to augment the heat. It very rarely happens, when the strongest lixivium has been used at the beginning, that the third ley (1·027 to 1·04 specific gravity) is necessary. This is employed only when the paste does not

boil, because then the object is to dilute it. As soon as the boiling is finished, the fire is withdrawn; the lixivium is then drawn off; after which the paste is left to cool, and taken up before it be fully coagulated, by means of copper or wooden buckets, to be transferred into moulds, into the bottoms of which a portion of pulverised lime has been previously introduced, to prevent the soap from adhering to them. At the end of two or three days, when the soap has become sufficiently hard, they remove it from the mould, and divide it into wedges of different sizes by means of a brass wire. They place these wedges on a floor edgways, where they are allowed to remain till they become perfectly firm and dry.

The fair trader, adds M. Chaptal, lays his account with procuring five pounds of soap from three pounds of oil. The soap is not marketable till it ceases to receive any impression from the fingers.

It must not be supposed that the lixivium employed at the commencement of the process should be constantly continued. The great art of soap-making consists in knowing to determine, from the appearance of the paste and other circumstances, what kind of lixivium should be employed during each step of the operation. The overseers regulate their conduct in this respect by observation and experience. The form and size of the bubbles, the color of the paste, the volume of that which is thrown out on the edges of the vessel, the consistence of the matter and its disposition to swell, as well as the appearance of the steam, all furnish them with criteria by which to regulate their conduct. It sometimes happens that the paste, though apparently very firm, yet when set in the cold air to concrete, throws out much water, and is resolved into small grains possessing little consistency. In this case it is evident that the ley is in excess, and must be dissipated by heat, or precipitated (separated) by means of marine salt. Frequently, also, the paste becomes greasy, and the oil appears to separate from the soda. As this in general proceeds from the paste not being imbued with sufficient water to keep it in combination, it is necessary to add to it a portion of water, or very weak lixivium, to remedy this defect.

The adulterations most commonly practised on soap are the following:—When the soap is made, they add to it much water, which renders it white. Frequently pulverised lime, gypsum, or pipeclay, are incorporated with it. The former of these frauds is readily discovered by the rapid loss of weight which the soap suffers on exposure to a dry air; the second can be easily detected by solution in alcohol, when the earthy matters fall down.

Hard soap is made in Scotland chiefly with kelp and tallow. That crude alkali rarely contains more than from one to five per cent. of free soda, mixed with some sulphate and hydrosulphite, and nearly thirty-three per cent. of muriate of soda. To every ton of kelp, broken into small fragments, about one-sixth of new slaked lime is added. The whole, after mixture, are put into a large tub called a cave, having a perforation at the bottom, shut with a wooden plug.

Upon the materials water is very slowly poured. The liquid, after digestion, is suffered to run slowly off into a reservoir sunk in the ground. The first portion, or ley No. 1, is of course the strongest, and is reserved for the last operation in soap-boiling. Dr. Ure found that a gallon of that of average strength contains 1000 grains of real soda, so that one pound of the alkali is present in seven gallons of the ley. The second portion run off contains 800 grains in one gallon, equivalent to a pound in eight gallons and three-quarters. The third contains 600 grains per gallon, or one pound in eleven gallons and two-thirds; and the fourth 200 grains, or one pound in thirty-five gallons. The last is not employed directly, but is thrown on a fresh mixture in the cave, to acquire more alkaline strength.

Six days are required to make one boiling of soap, in which two tons or upwards of tallow may be employed. The leys 2 and 3, mixed, are used at the beginning, diluted with water, on account of the excess of sea-salt in the kelp. A quantity of ley, not well defined, is poured on the melted tallow, and the mixture is boiled, a workman agitating the materials to facilitate the combination. The fire being withdrawn, and the aqueous liquid having subsided, it is pumped off, and a new portion is thrown in. A second boil is given, and so on in succession. Two or three boils are performed every twelve hours for six days, constituting twelve or eighteen operations in the whole. Towards the last the stronger ley is brought into play. Whenever the workman perceives the saponification perfect the process is stopped; and the soap is lifted out and put into the moulds.

When the price of American potash is such as to admit of its economical employment, a ley of that alkali, rendered caustic by lime, is used in the saponification, and the soft potash soap which results is converted into a hard soda soap, by double decomposition. This is effected either by the addition of common salt, or rather of a kelp ley, which supplies abundance of muriate of soda. The muriatic acid goes to the potash, to constitute muriate of potash, which dissolves in the water, and is drawn off in the spent ley; while the soda enters into combination with the fat (or rather the margaric and oleic acids, now evolved), and forms a soap, which becomes solid on cooling. A weak potash ley is used at first, and subsequently one of greater strength. Dr. Ure found the potash ley of a respectable manufacturer to contain 3000 grains of real potash per gallon; which is equivalent to one pound of real alkali in two gallons and one-third. But this proportion is not any standard; for practical soap-boiling is, in regard to the alkaline strength of the leys, in a deplorable state of darkness and imperfection. To this cause chiefly we may ascribe the perpetual disappointments which occur in the soap manufactories.

Two tons of tallow, properly saponified, should yield fully three tons of marketable white soap. But a manufacturer has been known to produce only two tons and a half, by some mismanagement of his leys. The sulphureted hydrogen present in the crude alkalies gives a blue stain to the soap. This may be removed, in a great

measure, by contact of air. But the proper plan would be to employ an alkali previously deprived as much as possible of its sulphur. Those who decompose sulphate of soda, with the view of using the alkali in saponification, are liable to many accidents from the above cause. Much balsam of sulphur is formed at the expense of the soap; and the manufactured article is generally inferior in detergent powers to the kelp soap, which, however, is by no means so free from sulphur as it might be made, previous to its employment, by simple methods, which would at the same time double its alkaline powers.

For brown or yellow soap, a mixture of tallow and resin, with a little palm oil to improve the color, is used. Soap of the coarser quality is made with equal parts of resin and tallow. But that of better quality requires three parts of tallow to one of resin; and for every ton of that mixture, half a hundred weight of palm oil. The resin soaps consume less alkaline ley than those with fat alone.

*Soft soaps.*—The compounds of fats or oils with potash remain soft, or at least pasty. Three kinds of these are known in commerce; the soaps from rape-seed, and other oleaginous seeds, called green soaps; toilette soaps, made with hog's-lard; and common soft soaps, made with fish oils. Manufacturers of green soap prepare their potash leys as those of hard soap do their soda leys, and conduct their operations in the same manner till the whole oils be added. In this state the soap resembles an unguent. It contains excess of oil, is white, and hardly transparent. After tempering the fire, they keep stirring continually the bottom of the caldron with large spatulas; they then add, by degrees, new leys perfectly caustic, and somewhat stronger than the first. The saturation of the oil is thus effected, and the soap becomes transparent. The fire is now continued to give the soap a suitable consistency, after which it is run off into barrels to be offered for sale.

We perceive that this species of soap differs considerably from the soap manufactured with olive oil and soda. Here, from the commencement of the operation to its end, the art of the soapboiler consists in effecting the combination of the oil with the potash, without the soap ceasing to be dissolved in the ley: whilst in the fabrication of hard soap it is necessary, on the contrary, as we have seen, to separate the soap from the ley, even before the saturation of the oil is accomplished.

Green soap contains, in general, more alkali than is absolutely necessary for the saturation of the oil. It is, in fact, a perfect soap, dissolved in an alkaline ley. It should be transparent, or a fine green color; a shade sometimes produced by means of indigo. According to M. Thenard it is usually composed of

Potash . . . . .	9·5
Fatty matter . . . . .	44·0
Water . . . . .	46·5

100·0

This soft soap may be readily converted into hard soap, as we have stated above, by the addition of muriate of soda.

*Toilette soaps*, made with hog's-lard and potash, should have as small an alkaline excess as possible. The finer soaps for the toilette are made with oil of sweet almonds, with nut oil, palm oil, suet, or butter. They are either potash or soda soaps, as they may be preferred in the pasty or solid state.

The following facts from Chaptal, on soft soaps, are worthy of insertion. After introducing into the caldron the half of the oil intended for one coction, the fire is kindled, and, when the oil begins to grow hot, we add to it a portion of the potash lixivium. The remainder of the oil and lixivium must afterwards be gradually poured in during the ebullition. If too much of the lixivium be employed at the commencement, no combination takes place; if the lixivium be too strong, the mixture separates into clots; and, if it be too weak, the union is incomplete. The quantity of the ley employed in one coction ought to be in the proportion of four parts to three of oil. 200 parts of oil, and 125 of potash, yield 325 of soap. When the union is fully accomplished, and the liquor rendered transparent, nothing remains but to employ the necessary degree of coction. The soapboilers judge of the degree of coction by the consistency, by the color, and from the time which the soap takes to coagulate. In order to make the froth subside, and render the mass fit for barrelling, one ton of soap (ready made?) is emptied into the caldron. The soap held in the greatest request is of a brown color, inclining to black. The manufacturers in Flanders dye the soap, by throwing into the caldron, half an hour before the termination of the boiling or coction, a composition of one pound of the sulphate of iron, half a pound of galls, and an equal quantity of red wood; and boiling it with the lixivium.

When the soap is prepared with a great portion of warm or yellow oil, a green color may be imparted to it, by pouring into the ley a solution of indigo. This soap is reckoned of the best quality: it remains always in the state of a soft paste, on which account it is placed in casks as expeditiously as possible.

Dr. Ure learned the following particulars on the manufacture of soft soap, from an eminent soapboiler, near Glasgow:—273 gallons of whale or cod oil, and four hundred weight of tallow, are put into the boiler, with 252 gallons of potash ley, whose alkaline strength I find to be such, that one gallon contains 6600 grains of real potash. Heat is applied, when the mixture froths up very much, but is prevented from boiling over by the wooden crib, which surmounts the iron caldron. If it now subside into a doughy magma, the ley has been too concentrated. It should have a thin gluey aspect. There are next poured in two measures of a stronger ley, holding each twenty-one gallons (containing per gallon 8700 grains real potash), and after a little interval other two measures, and so on progressively, till fourteen measures have been added in the whole. After suitable boiling, without agitation, the soap is formed, amounting in all to 100 firkins of sixty-four pounds each, from the above quantity of materials. The manufacture of soft soap is reckoned more difficult and delicate than that of hard

soap. Rape oil forms a hard soap, neither so consistent nor so white as that from olive-oil. Hempseed oil produces a green-colored soap, reducible to a paste by a small portion of water. The soaps prepared with oils procured from beech-mast and clove July-flowers, are of a clammy glutinous consistence, and generally of a grayish color. Nut-oil forms a soap not proper for the hands; it is of a yellowish-white color, of a moderate degree of consistence, unctuous, gluey, and continues so on exposure to the air. The soap of which linseed oil forms a constituent part is at first white, but changes to yellow in a short time on exposure to the air. It possesses a strong odor, is unctuous, clammy, glutinous, does not dry in the air, and softens with a very small quantity of water. From what has been said we may conclude that the soaps prepared with desiccative oils are of a very indifferent quality, that they remain always glutinous, and readily change their color on exposure to the atmosphere. Some of the volatile oils are not less susceptible of entering into combinations with the alkalies; but, as such soaps are not employed in the arts, we shall not enter into any description of these saponaceous compounds.

*Metallic soaps*.—These soaps have been examined by M. Berthollet, who has proposed some of them as paints, and others as varnishes; but it does not appear that any of them has been hitherto applied to these purposes.

1. Soap of mercury may be formed by mixing together a solution of common soap and of corrosive muriate of mercury. The liquor becomes milky, and the soap of mercury is gradually precipitated. This soap is viscid, not easily dried, loses its white color when exposed to the air, and acquires a slate-color, which gradually becomes deeper, especially if exposed to the sun or to heat. It dissolves very well in oil, but sparingly in alcohol. It readily becomes soft and fluid when heated.

2. Soap of zinc may be formed by mixing together a solution of sulphat of zinc and of soap. It is of a white color, inclining to yellow. It dries speedily and becomes friable.

3. Soap of cobalt, made by mixing nitrate of cobalt and common soap, is of a dull leaden color, and dries with difficulty, though its parts are not conducted. Berthollet observed that, towards the end of the precipitation, there fell down some green coagula, much more consistent than soap of cobalt. These he supposed to be a soap of nickel, which is generally mixed with cobalt.

4. Soap of tin may be formed by mixing common soap with a solution of tin in nitro-muriatic acid. It is white. Heat does not fuse it like other metallic soaps, but decomposes it.

5. Soap of iron may be formed by means of sulphate of iron. It is of a reddish-brown color, tenacious, and easily fusible. When spread upon wool it sinks in and dries. It is easily soluble in oil, especially of turpentine. Berthollet proposes it as a varnish.

6. Soap of copper may be formed by means of sulphate of copper. It is of a green color, has the feel of a resin, and becomes dry and brittle. Hot alcohol renders its color deeper, but scarcely

dissolves it. Ether dissolves it, liquifies it, and renders its color deeper and more beautiful. It is very soluble in oils, and gives them a pleasant green color.

7. Soap of lead may be formed by means of acetite of lead. It is white, tenacious, and very adhesive when heated. When fused it is transparent, and becomes somewhat yellow if the heat is increased.

8. Soap of silver may be formed by means of nitrate of silver. It is at first white, but becomes reddish by exposure to the air. When fused, its surface becomes covered with a brilliant iris; beneath the surface it is black.

9. Soap of gold is formed by means of muriate of gold: It is at first white and of the consistence of cream. It gradually assumes a dirty purple color and adheres to the skin.

10. Soap of manganese is formed of sulphate of manganese. It is at first white, and then, by absorbing oxygen, it becomes red.

There is no doubt that the ancients, as early at least as the age of Pliny, were in possession of a substance which they denominated soap; but as the word *sapo*, so far as we are able to trace it, was first employed by Pliny, we have no reason to suppose that the material which it designates was known, at least among the Romans, much earlier than his time; and the mode of making it, as well as the name, appears to have been introduced into Rome from the ancient Germans, whose term for it was *sepe*, and who certainly employed and manufactured it in an earlier period than the Romans. In effect it was ascribed by the Romans themselves to the Germans and Gauls, as has been observed by the late Dr. Good in his note to his translation of Lucretius, b. iv. 1046, ‘There is no doubt,’ he says, ‘that the ancients were in possession of a substance which they denominated soap; and it is equally unquestionable that such soap was formed in a manner not very different from our own. This soap, moreover, was of two sorts, hard and soft; but it does not appear that soap was ever employed among the Greeks, nor very early among the Romans, as an article of trade, by their fullers or scourers, and, notwithstanding the similarity of manufacture which seems to have prevailed, these soaps, whether hard or soft, were rather unguents for the head, than articles made use of for the purpose of blanching.’ Prodest est *sapo*, says Pliny, xviii. 12. ‘Galliarum hoc inventum mutandis capillis. Fit ex sebo et cinere, optimus fagino et capirno. Duobus modis, spissus ac liquidus. Uterque apud Germanos majore in usa viris quam fæminis.’ Soap is also useful, which is an invention of the Gauls, for deepening the color of the hair. It is made of suet and ashes, the best soap being from the suet of the goat and the ashes of the beech-tree. There are two sorts of soap, a solid and a liquid. Among the Germans the men employ both kinds more freely than the women.’ That it was applied to the hair, for the purpose here specified, we learn also from Martial, who, in one of his epigrams, advises an old coquette who raved at her gray locks to procure soap balls from Germany to change their color. By degrees, how-

ever, and probably, first of all, about the time of Galen, these soaps began to be employed in the scouring of woollen stuffs, as well as for the purpose of general cleanliness: for, after having stated the different repute of the soaps of different countries, he thus expresses himself, as though he were relating a truth not generally known: ‘Verum omnis sapo potest omnem sordem de corpore abstergere, vel de pannis.’ ‘But every kind of soap is capable of removing filth, of whatever description, whether from the body or from clothes.’

Dr. Good farther observes that, antecedently to the use of soap, the detergents materials commonly employed were urine, which for this purpose was collected at Rome in large reservoirs, lixivium or lye, and various plants, of which the chief appears to have been what the Hebrews called borith (ברית), the Greeks struthos or struthion (*στρουθος* or *στρουθον*), and the Romans herba lanaria, or radix lanaria, probably the saponaria of Linnæus. The fullers of Rome employed also absorbent earths in conjunction with lyes and detergents plants. These were of various kinds, and from various countries: the most esteemed was that denominated Cimolian earth, from the Isle of Cimolis, which was one of the Cyclades, and where it was found in abundance. It was known at least as early as the time of Aristophanes, who mentions it in his comedy of The Frogs; and it is still in use, according to Bomare, among the inhabitants of the Archipelago, and applied to the same purpose of bleaching stuffs and linens. They also employed another kind of absorbent earth, which was procured in the island of Sardinia; which, however, was principally made use of in cleaning white dresses, and did not equally succeed when applied to colored; whence it is styled, by Nonius Marcellus, *inutilis versicoloribus*.

‘These earths or boles were, for the most part, pressed into the stuffs or cloths by the hands or feet; hence the phrase in Nonius: ‘pedibus cretam dum compescis;’ and these various operations produce an amazing change in their texture by driving the web of the woof more closely to that of the chain, and hence blending them more intimately together. When cloths and serges first proceed from the hands of the weaver, they are loose and coarse, and in this state would be but of little value or duration. But, by intermingling and amalgamating the web of the chain with that of the woof, the artist renders both finer and stronger. This operation of fulling, as just observed, was chiefly produced by the action of the hands or feet; by rubbing with the former or trampling with the latter, and is significantly expressed by the Greek terms πατεῖν συμπατεῖθαι, and by Nonius, argutari pedibus. Rollers were, nevertheless, occasionally employed in this branch of the business, as well for beating as for pressing the cloth; and Cato, among other utensils with which a farmhouse ought to be stocked, enumerates, in consequence, the pilæ fulloniceæ, or fuller’s beams or rollers, which, he expressly tells us, were formed of wood.’

The present duties imposed on soap are:—

	Duty.	£	s.	d.
Soap, hard, the cwt.	4	10	0	
— soft, the cwt.	3	11	3	
— the produce of any British possession in the East Indies, viz. hard, the cwt.	1	8	0	
soft, the cwt.	1	3	0	

**SOAP-BERRY** (*sapindus*). These trees somewhat resemble the hickories or walnuts in their foliage, but are widely different in their fruit and botanical characters. The fruit is globular, as large as a cherry, enclosing a nut of a shining black color when ripe. The pulp serves as a substitute for soap in washing linen, but is very apt to burn and destroy it, if used too frequently. The nuts are very hard, black, and finely polished, and are used for beads. Formerly, they were imported into Europe for waistcoat buttons, and were sometimes tipped with silver or other metals. They were very durable, as they do not wear, and seldom break. The whole plant, especially the seed-vessel, being pounded and steeped in ponds, rivulets, or creeks, is observed to intoxicate and kill the fish. The wood is white, and full of gum, in odour and taste resembling copal. The flowers are disposed in terminal and branching panicles, and the berries are pendulous. A species of *sapindus* (*S. marginatus*) grows wild in North America. The other species of *sapindus* are exclusively tropical.

**SOAP STONE.** A species of steatite. It derives its name from its colour, and the peculiar unctuous sensation which it imparts to the feeling.

**SOAPWORT.** See **SAPONARIA**.

**SOAR**, *v. n., v. a., & n. s.* Ital. *sorare*. To fly aloft; tower; mount; properly to fly without any visible action of the wings: to rise intellectually: Milton uses it actively: as a noun substantive, towering flight.

**SOB**, *v. n. & n. s.* Sax. *reob*, complaining. To heave audibly with convulsive sorrow; sigh with convulsion: a sigh of this kind.

When thy war-like father, like a child,  
Told the sad story of my father's death,  
He twenty times made pause to sob and weep,

*Shakespeare.*

**SOBER**, *adj. & v. a.* } Fr. *sobre*; Lat. *soberus*. Temperate, particularly in liquors; not drunken; hence regular; calm in mind or character; serious; grave: to make sober: the adverb and noun substantive corresponding.

**SOBIESKI**, or JOHN III., king of Poland, one of the greatest warriors of the 17th century, was born 1629. His father, James Sobieski, equally distinguished for his virtues in peace and his courage in war, took great care to nourish the same qualities in his sons, Mark and John. The Poles had just been defeated at Pilawiecz, when these youths returned from their travels. This misfortune only served to excite their courage. Mark fell in a second engagement with the Cossacks, on the banks of the Bog; but John, more fortunate than his brother, became successively grand marshal and general of the

kingdom. Full of courage, he exposed himself like the meanest soldier, to the greatest dangers, and, when urged to take care of his person, replied, "If I follow your advice, you will despise me." He became the terror of the Tatars and Cossacks, over whom he was perpetually gaining new victories. November 11, 1673, he won the celebrated battle at Choczim against the Turks, who lost there 28,000 men. The following year, he was elected king of Poland. When the Turks laid siege to Vienna, in 1683, he hastened thither with a Polish army, and rescued the imperial city. His cavalry was splendid, but his infantry was poorly equipped. To conceal the condition of the latter, he was advised to send one of the worst clothed regiments of infantry over the river by night, to save them from the gaze of spectators. Sobieski was of a different opinion. "When the regiment was on the bridge, he said to those who surrounded him, "Behold them—they are invincible; they have sworn never to wear any dress but that of enemies: in the last war, they were all clothed in the garb of Turks." On his arrival, he chose the most advantageous position, ascended an elevation to observe the disposition of the grand vizier, and remarked—"He has selected a bad position. I understand him; he is ignorant, and persuaded of his own genius. We shall gain no honour from this victory." Sobieski was not deceived. The next day the Turks were driven from their camp in terror, leaving behind the holy standard of Mohammed, which the conqueror sent to the pope with the following letter: "I came, I saw, and God has conquered." On his entrance into Vienna, at the head of his victorious Poles, the inhabitants received him with indescribable enthusiasm. They pressed around to embrace his feet, or touch his garments or his horse, and proclaimed him their saviour and deliverer. He was moved even to tears, and under the strong impulse of his feelings, called this the happiest day of his life. In 1693, he was attacked by a dangerous sickness, and was doomed to witness that dissension which usually attends the election of a king in Poland. Foreign enemies united with domestic factions. Sobieski was no longer in a condition to quiet the disturbances, and the moment was fast approaching which was to deprive him at once of his life and his throne. The queen wished him to make a will, and communicated her wishes through one of the bishops. He refused, asserting that, in a nation like his, party rage would prevail over all his influence. He died 1696, in the twenty-third year of his reign. Scarcely had he closed his eyes, when jealousy and envy united to stain his memory. Some reproached him with having purchased lands contrary to the laws, which forbade the king to hold any private property. Others maintained that the Christian league which he had joined against the Turks, had cost his country more than 200,000 men. Others still asserted that he was too fond of money and expensive journeys. Certainly no court was ever less stationary than his. He performed the tour of Poland every year with his queen, and visited all his estates, like a nobleman. This fault, however, if it may

be called a fault, should not cast a veil over the virtues of Sobieski. He was fond of the sciences, spoke several languages, and deserved to be loved for his gentleness and affability. His three sons died without leaving any male descendants. The character of Sobieski is displayed in the Lettres du Roi de Pologne Jean Sobieski à la Reine Marie Casimire, pend. la Camp. de Vienne, trad. par le Comte Plater, et publ. par N. A. de Salvandy (Paris, 1826).

SOC (Sax.) signifies power or liberty to minister justice or execute laws: also the circuit or territory wherein such power is exercised. Whence the law Latin word *socca* is used for seignory or lordship enfranchised by the king, with the liberty of holding or keeping a court of his sockmen: and this kind of liberty continues in divers parts of England to this day, and is known by the name of *soke* and *soken*.

**SOCCAGE, n. s.** Fr. *soc*, a ploughshare; barb. Lat. *socagium*. In law, a tenure of lands for certain inferior or husbandly services to be performed to the lord of the fee: so that whatever is not knight's service is *soccage*.

The lands are not holden at all of her majesty, or not holden in chief, but by a mean tenure in *soccage*, or by knight's service.

Bacon.

**SOCAGE**, in law, is a tenure of lands, for certain inferior or husbandly services to be performed to the lord of the fee. All services due for land being knight's service, or *soccage*; so that whatever is not knight's service is *soccage*. This *soccage* is of three kinds; a *soccage* of free tenure, where a man holdeth by free service of twelve pence a year for all manner of services. *Soccage* of ancient tenure is of land of ancient demesne, where no writ original shall be sued, but the writ secundum consuetudinem manerii. *Soccage* of base tenure is where those that hold it may have none other writ but the monstravunt, and such sockmen hold not by certain service.—Cowel. The lands are not holden in chief but by a mean tenure in *soccage*.—Bacon.

**SOCAGE** or **SOCAGE** (says the learned Blackstone, in his Comm. vol. ii.), in its most general and extensive signification, denotes a tenure by any determinate service. In this sense it is by ancient writers constantly put in opposition to chivalry or knight-service, where the render was precarious and uncertain. The service must therefore be certain, to denominate it *soccage*; as to hold by fealty and 20*s* rent; or by homage, fealty, and 20*s* rent; or by homage and fealty without rent; or by fealty and certain corporal services, as ploughing the lord's land for three days; or by fealty only, without any other service; for all these are tenures in *soccage*. *Soccage* is of two sorts; free *soccage*, where the services are not only certain but honorable; and villein *soccage*, where the services, though certain, are of a baser nature. See **VILLEINAGE**. Such as hold by the former tenure are called, in Glanvil and other subsequent authors, by the name of *liberi sokemanni*, or tenants in free *soccage*. The word is derived from the Saxon appellation *soc*, which signifies liberty or privilege; and, being joined

to a usual termination, is called *socage*, in Latin *socagium*; signifying thereby a free or privileged tenure. It seems probable that the *socage* tenures were the relics of Saxon liberty; retained by such persons as had neither forfeited them to the king, nor been obliged to exchange their tenure for the more honorable, as it was called, but at the same time more burdensome, tenure of knight-service. This is peculiarly remarkable in the tenure which prevails in Kent, called *gavelkind*, which is generally acknowledged to be a species of *socage* tenure; the preservation whereof inviolate from the innovations of the Norman conqueror is a fact universally known. And those who thus preserved their liberties were said to hold in free and common *soccage*. As therefore the grand criterion, and distinguishing mark of this species of tenure, are the having its renders or services ascertained, it will include under it all other methods of holding free lands by certain and invariable rents and duties; and in particular, *petit serjeantry*, *tenure in burgage*, and *gavelkind*.

**SOCIABLE, adj.** Fr. *sociable*; Lat. *sociabilis*. Fit or ready to **SOCIABLY, adv.** be conjoined or united; **SOCIAL, adj.** friendly; familiar: social is in many respects synonymous; it means also easy; relating to society: the noun substantive and adverb follow the senses of *sociable*.

Another law toucheth them, as they are *sociable* parts united into one body; a law which bindeth them each to serve unto other's good, and all to prefer the good of the whole before whatsoever their own particular.

Hooker.

In children much solitude and silence I like not, nor any thing born before his time, as this must needs be in that *sociable* and exposed age. Wotton.

Such as would call her friendship love, and feign To *sociableness* a name profane.

Doune.

He always used courtesy and modesty, disliked of none; sometimes *sociableness* and fellowship, well liked by many.

Hayward.

They thus employed beheld With pity heaven's high King, and to him called Raphael, the *sociable* spirit that deigned To travel with Tobias.

Milton.

Yet not terrible,  
That I should fear; nor *sociably* mild,  
As Raphael, that I should much confide,  
But solemn and sublime.

Id.

Thou in thy secrecy although alone,  
Best with thyself accompanied, seekest not  
*Social communication.*

Id.

The two main properties of man are contemplation and *sociableness*, or love of converse.

More.

To love our neighbour as ourselves is such a fundamental truth, for regulating human society, that by that alone one might determine all the cases in *social* morality.

Locke.

To make man mild and *sociable* to man;  
To cultivate the wild licentious savage  
With wisdom, discipline.

Addison's Cato.

True self-love and *social* are the same.

Pope.

Thus abandoned of aim or view in life, with a strong appetite for *sociability*, as well from native hilarity as from a pride of observation and remark, a constitutional melancholy or hypochondriasm that made me fly solitude.

Burns.

## SOCIETY.

**SOCIETY**, n. s. Fr. *société*; Lat. *societas*. Union of many in one general interest; company; converse: partnership.

To make society

The sweeter welcome, we will keep ourselfe  
Till supper-time alone. *Shakspeare. Macbeth.*

Whilst I was big in clamour, there came a man,  
Who, having seen me in my worser state,  
Shunned my abhorred *society*. *Id. King Lear.*

As there is no *society* free from some corruption,  
so it is hard, if, in a community of men, there be not  
some faithfulness. *Bp. Hall. Contemplations.*

Solitude sometimes is best *society*,  
And short retirement urges sweet return. *Milton.*

As the practice of piety and virtue is agreeable to  
our reason, so is it for the interest of private persons  
and publick *societies*. *Tillotson.*

Heaven's greatness no *society* can bear;  
Servants he made, and those thou wantest not here. *Dryden.*

If the power of one *society* extend likewise to the  
making of laws for another *society*, as if the church  
could make laws for the state in temporals, or the  
state make laws binding the church relating to *spirituals*, then is that *society* entirely subject to the other.  
*Lesley.*

**SOCIETY.** It may seem somewhat eccentric to insert the article **SOCIETY**, as an article in a dictionary of science. But if it be considered how closely all the arts and sciences are connected with society, that they are all studied, discovered, cultivated, and improved, only in consequence of the association of mankind, and that in a solitary or savage state they can hardly have any existence, the propriety of inserting this important article in a scientific form will appear self-evident.

The subject falls naturally to be divided into two parts; I. Concerning the rise, progress, advantages, and declension of civilised society: II. Giving a short account of various publick societies for the promotion, improvement, and general diffusion of arts, sciences, religion, morals, and humanity.

## PART I.

## OF THE ORIGIN, PROGRESS, PERFECTION, AND DECLENSION OF CIVILISED SOCIETY.

## SECT. I.—OF THE ADVANTAGES OF CIVILISED SOCIETY AND ITS ORIGIN.

So great are the advantages which each individual evidently derives from living in a social state, and so helpless does any human being appear in a solitary state, that we naturally conclude, that if there ever was a period at which mankind were solitary beings, that period could not be of long duration; for their aversion to solitude and love of society would soon induce them to enter into social union. Such is the opinion which we conceive when we compare our own condition as members of civilised and enlightened society with that of the brutes, or with that of savages in the earlier and ruder periods of social life. When we hear of Indians

wandering naked through the woods, destitute of arts, unskilled in agriculture, scarcely capable of moral distinctions, void of all religious sentiments, or possessed with the most absurd notions concerning superior powers, and procuring means of subsistence in a manner equally precarious with that of the beast of prey—we look down with pity on their condition, or turn from it with horror. When we view the order of cultivated society, and consider our institutions, arts, and manners—we rejoice over our superior wisdom and happiness.

Man in a civilised state appears a being of a superior order; yet some philosophers tell us that it is only he who, having been educated in society, has been taught to depend upon others, that can be helpless or miserable when placed in a solitary state. They view the savage who exerts himself with intrepidity to supply his wants, or bears them with fortitude, as the greater hero, and possessing the greatest happiness.

Whatever be the supposed advantages of a solitary state, certain it is that mankind, at the earliest period, were united in society. Various theories have been formed concerning the circumstances and principles which gave rise to this union: but we have elsewhere shown that the greater part of them are founded in error; that they suppose the original state of man to have been that of savages; and that such a supposition is contradicted by the most authentic records of antiquity. For though the records of the earlier ages are generally obscure, fabulous, and imperfect, yet happily there is one narrative free from the imperfections of the rest, and of undoubted authenticity, to which we may safely have recourse. This is found in the Pentateuch of Moses, which presents us with a genuine account of the origin of man and of society.

According to Moses the first society was that of a husband and wife united in the bonds of marriage; the first government that of a father and husband, the master of his family. Men lived together under the patriarchal form of government, while they employed themselves chiefly in tending flocks and herds. Children in such circumstances cannot soon rise to an equality with their parents, where a man's importance depends on his property, not on his abilities. When flocks and herds are the chief articles of property, the son can only obtain these from his father: in general, therefore, the son must be dependent on the father for the means of subsistence. If the parent, during his life, bestow on his children any part of his property, he may do it on such conditions as shall make their dependence upon him continue till the period of his death. When the community are by this event deprived of their head, instead of continuing in a state of union, and selecting some one from among themselves whom they may invest with the authority of a parent, they separate into so many distinct tribes, each subjected to the authority of a different lord, the master of the family,

and the proprietor of all the flocks and herds belonging to it. Such was the state of the first societies which the narrative of Moses exhibits to our attention.

#### SECT. II.—OF THE HYPOTHESES OF PHILOSOPHERS RESPECTING AN ORIGINAL STATE OF SAVAGISM.

Those philosophers who have made society, in its various stages between rudeness and refinement, the subject of their speculations, have generally considered mankind, in whatever region or climate of the globe, as proceeding uniformly through certain regular gradations from one extreme to the other. They regard them, first, as gaining a precarious subsistence by gathering the spontaneous fruits of the earth, or by fishing or hunting. Next, they say, man rises to the shepherd state, and next, to that of husbandmen, when they turn their attention from the management of flocks to the cultivation of the ground. Next, these husbandmen improve their powers, and better their condition, by becoming artizans and merchants; and the beginning of this period is the boundary between barbarity and civilisation. These are the stages through which they who have written on the natural history of society have generally conducted mankind from rudeness to refinement: but they have overlooked the manner in which mankind were at first established on this earth; the circumstances in which the parents of the human race were originally placed; the degree of knowledge communicated to them; and the instruction which they must have been capable of communicating to their posterity. They rather appear to consider the inhabitants of every different region of the globe as aborigines, springing at first from the ground, or dropped on the spot which they inhabit; no less ignorant than infants of the nature and relations of the objects around them, and of the purposes which they may accomplish by the exercise of their organs and faculties.

The absurdity of this theory has been fully demonstrated elsewhere. See SAVAGISM. And, if we receive the Mosaic account of the original establishment of mankind, we shall view the phenomena of social life in a light very different. Though many of the rudest tribes are found in the state of hunters or fishers, yet the hunting or fishing state cannot have been invariably the primary form of society. Notwithstanding the powers with which we are endowed, we are in a great measure the creatures of circumstances. Physical causes exert, though indirectly, a great influence in forming the character and directing the exertions of the human race. Moses informs us that the first societies of men lived under the patriarchal form of government, and employed themselves in the cultivation of the ground and management of flocks. And as we know that mankind, being subjected to the influence both of physical and moral causes, are no less liable to degeneracy than capable of improvement, we may easily conceive that, though descending all from the same original pair, and though enlightened with much traditional knowledge relative to the arts of life, the order of society, moral distinctions, and religious obligations;

yet as they were gradually, and by various accidents, dispersed over the earth, being removed to situations in which the arts with which they were acquainted could but little avail them, where industry was overpowered, or indolence encouraged, by the severity or the profusion of nature, they might degenerate and fall into a condition almost as humble and precarious as that of the brutal tribes.

If, then, laying aside the spirit of theory and system, we set ourselves to trace facts, and to listen to evidence; though our supposed discoveries may be fewer, yet the knowledge we thus acquire will be more useful and our speculations more consistent with true philosophy.

If, then, we are further desirous of surveying society in its rudest form, we must look, not to the earliest period of its existence, but to those districts of the globe where external circumstances concur to drive men into a state of stupidity and wretchedness. Thus, in many places of the happy clime of Asia, which a variety of ancient records concur with the sacred writings in representing as the first peopled quarter of the globe, we cannot trace the form of society backwards beyond the shepherd state. In that state, indeed, the bonds which connect society extend not to a wide range of individuals, and men remain for a long period in distinct families; but yet that state is highly favorable to knowledge, to happiness, and to virtue. Again, the torrid and the frozen regions of the earth, though probably peopled at a later period, and by tribes sprung from the same stock with the shepherds of Asia, have yet exhibited mankind in a much lower state. It is in the parched deserts of Africa and the wilds of America that human beings have been found in a condition approaching the nearest to that of the brutes.

We may therefore take a view of the different stages through which philosophers have considered mankind as advancing, beginning with that of rudeness, though we have shown that it cannot have been the first in the progress.

#### SECT. III.—OF THE RUDE STATE, OR SUPPOSED FIRST STAGE OF SOCIETY.

Where the human species are in the lowest and rudest state, their rational and moral powers are very faintly displayed; but their external senses are acute, and their bodily organs active and vigorous. Hunting and fishing are then their chief employments and only support. During that time which is not spent in these pursuits, they are sunk in listless indolence. They are roused to active exertion only by the pressure of necessity or the urgent calls of appetite. Accustomed to endure the severity of the elements, and but scantily provided with the means of subsistence, they acquire habits of fortitude, which are beheld with astonishment by those who enjoy the plenty of cultivated life. But in this state of want and depression, when the powers and possessions of every individual are scarcely sufficient for his own support, when even the calls of appetite are repressed because they cannot always be gratified, and the more refined passions, which either originate from such as are merely animal, or are intimately con-

nected with them, have not yet been felt—in this state all the milder affections are unknown; or if the breast is at all sensible to their impulse, it is extremely feeble. Husband and wife, parent and child, brother and sister, are united by the weakest ties. If we listen to the relations of respectable travellers, human beings have sometimes been found in that abject state where no proper ideas of subordination, government, or distinction of ranks, could be formed. No distinct notions of deity can be here entertained. Of arts they must be almost totally destitute. They may use some instruments for fishing or the chase; but these must be rude and simple. To shelter them from the inclemency of the elements, both their houses and clothing will be awkward and inconvenient.

#### SECT. IV.—OF THE PROGRESS OF SOCIETY IN THE SECOND STAGE.

But human beings have been seldom found in so rude a state as this. Even those tribes which we denominate savage are for the most part farther removed from mere animal life. They generally appear united under some species of government, exercising the powers of reason, capable of morality, though very little refined; displaying some degree of social virtues, and acting under the influence of religious sentiments. These are to be found still in the hunting and fishing state; but they are farther advanced towards social life, and are more sensible to the impulse of social affection. By intercourse in their employments a few hunters or fishers contract a fondness for each other's company, and take some part in each other's joys and sorrows; and, when the social affections thus generated begin to exert themselves, all the other powers of the mind are called forth, and the circumstances of society are improved. Huts are now built, more commodious clothes are made, instruments for the annoyance of wild beasts, and even of enemies, are contrived; in short, arts and sciences, and social order, and religious sentiments and ceremonies, now make their appearance in the rising society. But, though social order is no longer unknown nor unobserved, yet the form of government is still extremely simple, and its ties are but loose and feeble. It may bear some resemblance to the patriarchal; only all its members are on a more equal footing, and at the same time less closely connected than in the shepherd state, to which that form of government seems almost peculiar. The old men are treated with veneration; but the young are not entirely subject to them. They may listen respectfully to their advice; but they do not submit to their arbitrary commands. Where mankind are hunters and fishers, where the means of subsistence are precariously acquired, and prudent foresight does not prompt to accumulate much provision for the future, no individual can acquire comparative wealth. As soon as the son is grown up, he ceases to be dependent on his father, as well as on the society. Difference of experience, therefore, constitutes the only distinction between the young and the old; and, if the old have experience, the young have strength and activity.

Here, then, neither age nor property can give rise to any striking distinction of ranks. All who have attained to manhood, and are not disabled by deficiency of strength or agility, or by the infirmities of old age, are on an equal footing; or, if any one possess a pre-eminence over the rest, he owes it to superior address or fortitude. The whole tribe deliberate; the old give their advice; each individual of the assembly receives or rejects it at his pleasure; and the warrior who is most distinguished for strength, address, and valor, leads out the youth of the tribe to the chase or against the enemy. War, which in the former state did not prevail, now first begins to depopulate the thinly inhabited regions where these hunters and fishers pursue their prey. They are scattered in scanty and separate tribes, over an immense tract of country; but they know no medium between the affection which brethren of the same tribe bear to each other and the hatred of enemies. Though thinly scattered over the earth, yet the hunting parties of different tribes will sometimes meet as they range the forests; and, when they meet, they will view each other with a jealous eye: for the success of the one party in the chase may cause the other to be unsuccessful; and while the one snatches the prey the other must return home to all the pangs of famine. Inveterate hostility will therefore prevail among the neighbouring tribes in the hunting state. They have at this period some ideas of superior beings. They also practise certain ceremonies to recommend them to those beings; but both their sentiments and ceremonies are superstitious and absurd.

We have elsewhere shown (see POLYTHEISM) how savage tribes have probably degenerated from the pure worship of the one true God to the adoration of a multitude of imaginary divinities. We have traced this idolatrous worship from that of the heavenly bodies, through all the gradations of *dæmon*-worship, hero-worship, and statue-worship, to that wonderful instance of absurd superstition, the worship of the vilest reptiles. But we pretend not that the progress of polytheism has been every where in the same order. The characters and circumstances of nations are scarcely less various and anomalous than those of individuals. Among many of the American tribes, however, among the ancient inhabitants of the forests of Germany, whose manners are so accurately delineated by Tacitus, and in some of the islands scattered over the southern ocean, religion, arts, and government have been found in that state which we have described as the second stage of social life.

#### SECT. V.—OF THE PROGRESS OF IMPROVEMENT IN THE THIRD STAGE OF SOCIETY.

We may now survey human life as approaching somewhat nearer to a civilised and enlightened state. As property is acquired, inequality and subordination of ranks necessarily follow; and, when men are no longer equal, the many are soon subjected to the will of the few. But what gives rise to these new phenomena is that, after having often suffered from the precariousness of the hunting and fishing state, men begin to extend their cares beyond the present moment,

and to think of providing some supply for future wants. When they are enabled to provide such a supply, either by pursuing the chase with new eagerness and perseverance, by gathering the spontaneous fruits of the earth, or by breeding tame animals, these acquisitions are at first the property of the whole society, and distributed from a common store to each individual. But as, by this mode of distribution, industry and activity are treated with injustice, while negligence and indolence receive more than their due, each individual will soon become his own steward, and a community of goods will be abolished. As soon as distinct ideas of property are formed, it must be unequally distributed; and, as soon as property is unequally distributed, there arises an inequality of ranks. Here we have the origin of the depression of the female sex in rude ages, of the tyrannical authority exercised by parents over their children, and of slavery. The women cannot display the same perseverance, activity, or address, as the men in pursuing the chase. They are therefore left at home, and from that moment are no longer equals, but slaves, who must subsist by the bounty of the males, and must therefore submit with implicit obedience to all their capricious commands. Even before the era of property, the female sex were viewed as inferiors; but till that period they were not reduced to a state of slavery.

In this period of society new notions are formed of the relative duties. Men now become citizens, masters, and servants; husbands, parents, &c. It is impossible to enumerate all the various modes of government which take place among the tribes who have advanced to this stage; but one thing certain is, the authority of the few over the many is now first established, and that the rise of property first introduces inequality of ranks. In one place the community is subjected to the will of a single person; in another, power may be lodged in the hands of a number of chiefs; and, in a third, every individual may have a voice in creating public officers, and in enacting laws for the support of public order. But as no code of laws is formed during this period, justice is not very impartially administered, nor are the rights of individuals very faithfully guarded.

This is the age of hero-worship, and of tutelary gods; for it is in this stage of society that the invention of arts, which gave rise to that worship, contributes most conspicuously to the public good. War, too, which we considered as beginning first to ravage the earth during the former period, and which is another cause of the deification of dead men, will still prevail in this age, and be carried on with no less ferocity than before, though in a more systematic form. The prevalence of war, and the means by which subsistence is procured, must have considerable influence on the character and sentiments of societies and individuals. The hunter and the warrior are characters quite different from the shepherd and the husbandman. Such in point of government, arts, and manners, religious and moral sentiments, were several of the German tribes described by Tacitus, and the Britons whose character has been sketched by the pen of

Cæsar: such, too, were the Romans in the early period of their history; such, too, the Greeks, whom Homer celebrates as the destroyers of the Trojan state; the northern tribes also, who poured through Asia, Africa, and Europe, and overthrew the Roman empire, appear to have been of a nearly similar character.

In this period of society the state of the arts merits attention. The shepherds and the hunters are in that respect pretty equal. Whether we examine the records of ancient history, or view the islands scattered through the South Sea, or range the wilds of America, or survey the snowy wastes of Lapland and the frozen coast of Greenland—still we find the useful arts in this period, though known and cultivated, in a very rude state; and the fine arts, or such as are cultivated merely to please the fancy or to gratify caprice, displaying an odd and fantastic, not a true or natural, taste; yet this is the period in which eloquence shines with lustre; all is metaphor or glowing sentiment. Languages are not yet copious; and therefore speech is figurative, expressive, and forcible.

But let us advance a little farther, and contemplate our species in a new light, where they will appear with greater dignity and amiableness of character. Let us view them as husbandmen, artizans, and legislators.

#### SECT. VI.—OF THE RAPID PROGRESS OF IMPROVEMENT IN THE FOURTH STAGE OF SOCIETY.

Whatever circumstances might turn the attention of any people from hunting to agriculture, or cause the herdsman to yoke his oxen for the cultivation of the ground, certain it is that this change in the occupation would produce a happy change on the character and circumstances of men; it would oblige them to exert a more regular and persevering industry. The hunter is like one of those birds that are described as passing the winter in a torpid state; the shepherd's life is extremely indolent: neither of these is very favorable to refinement. But different is the condition of the husbandman. His labors succeed each other in regular rotation through the whole year; each season has its proper employments; he therefore must exert active persevering industry; and in this state we often find the virtues of rude and polished nations united. This is the period where barbarism ends and civilisation begins. Nations have existed for ages in the hunting or the shepherd state, fixed as by a kind of stagnation, without advancing farther. But scarcely any instances occur in the history of mankind of those who once reached the state of husbandmen remaining long in that condition without rising to a more civilised and polished state. Where a people turn their attention in any considerable degree to the objects of agriculture, a distinction of occupations naturally arises among them. The husbandman is so closely employed through the several seasons of the year in the labors of the field, that he has no longer leisure to exercise all the rude arts known among his countrymen. He has not time to fashion the instruments of husbandry, to prepare his clothes, to build his house, to manufacture household utensils, or to tend those tame animals which he

continues to rear. Those different departments therefore now begin to employ different persons, each of whom dedicates his whole time and attention to his own occupation. The manufacture of cloth is for a considerable time managed exclusively by the women; but smiths and joiners arise from among the men, and metals begin to be considered as valuable materials. The intercourse of mankind is now placed on a new footing. Before, every individual practised all the arts that were known, as far as was necessary for supplying himself with the conveniences of life; now he confines himself to one or to a few of them; and, to obtain a necessary supply of the productions of those arts which he does not cultivate himself, he gives in exchange a part of the productions of his own labors. Here we have the origin of commerce. After continuing for some time in this state, as arts and distinctions multiply in society, the exchange of one commodity for another is found inconvenient. It is contrived to adopt a medium of commerce, to render the exchange of property easy and expeditious. Wherever metals have been known, they have been adopted as the medium of commerce almost as soon as such a medium began to be used; and this is one important purpose for which they serve; but they have still more important uses. Almost all the necessary arts depend on them. Where the metals are known, agriculture practised, and the necessary arts distributed among different orders of artisans, civilisation and refinement advance with a rapid progress. As soon as ornament and amusement are thought of, the fine arts begin to be cultivated. In their origin therefore they are not long posterior to the necessary and useful arts. They appear long before men reach the comfortable and respectable condition of husbandmen; but rude is their character at their first origin. But, in the period of society which we are now considering, they aspire to a higher character.

One of the noblest changes, which the introduction of the arts by agriculture produces on the form and circumstances of society, is the introduction of regular government and laws. In tracing the history of ancient nations, we scarcely ever find laws introduced at an earlier period. Minos, Solon, and Lycurgus, do not appear to have formed codes of wisdom and justice for regulating the manners of their countrymen, till after the Cretans, Athenians, and Lacedemonians, had made some progress in agriculture and the useful arts.

Religion, under all its various forms, has in every stage of society a mighty influence on the sentiments and conduct of men; and the arts cultivated in society have on the other hand some influence on the system of religious belief. The female sex in this period generally find the yoke of their slavery somewhat lightened. Men now become easier in their circumstances; the social affections assume stronger influence over the mind; plenty, and security, and ease, at once communicate both delicacy and keenness to the sensual desires. All these circumstances concur to make men relax that tyrannical sway by which they before depressed the softer sex. The foundation of that empire, where beauty

triumphs over both wisdom and strength, now begins to be laid. Such are the effects which history warrants us to attribute to agriculture and the arts; and such the outlines of the character of that which we reckon the fourth stage in the progress of society from rudeness to refinement.

#### SECT. VII.—OF THE FIFTH STAGE, OR HIGHEST STATE OF IMPROVEMENT IN SOCIETY.

We have not yet surveyed mankind in their most polished and cultivated state. Society is rude at the period when the arts first begin to show themselves, in comparison of that state to which it is raised by the industrious cultivation of them. Athens and Lacedemon afford us a happy opportunity of comparing this with the former stage in the progress of society. The chief effect produced by the institutions of Lycurgus seems to have been to fix the manners of his countrymen for a considerable period in that state to which they had attained in his days. Spartan virtue has been admired and extolled in the language of enthusiasm; but even the character and the condition of the savage inhabitants of the wilds of America have been preferred by some philosophers to the virtues and the enjoyments of social life in the most polished and enlightened state. The Spartans in the days of Lycurgus had begun to cultivate the ground, and were not unacquainted with the useful arts. They must soon have advanced farther, had not Lycurgus arisen, and, by effecting the establishment of a code of laws, the tendency of which appears to have been in many particulars directly opposite to the designs of nature, retarded their progress towards complete civilisation and refinement. See SPARTA. The history of the Lacedemonians, therefore, while the laws of Lycurgus continued in force, exhibits the manners and character of a people in that which we have denominated the fourth stage in the progress of society. But in the history of their neighbours, the Athenians, we behold the natural progress of opinions, arts, and manners. The useful arts are first cultivated with such steady industry as to raise the community to opulence, by commerce with foreign nations. The useful arts, raised to this height of improvement, lead men to the pursuit of science. Commerce, skill in the useful arts, and a taste for science, mutually aid each other, and promote farther improvements. Hence magnificent buildings, noble statues, paintings expressive of life, action, and passion; and poems in which imagination adds new grace to nature, and gives social life more irresistible power over the affections. Hence are moral distinctions more carefully studied, and the rights of every individual and every order in society more accurately defined. Moral science is generally the first scientific pursuit which strongly attracts the attention of men; with the exception of Egypt and Chaldea. In Egypt, the overflowing of the Nile caused geometry to be early cultivated. Causes no less favorable to the study of astronomy recommended that science to the Chaldeans long before they had attained the height of refinement. But in general the laws of morality are under-

stood, and the principles of morals enquired into, before men make any considerable progress in physical science. Accordingly, in this period, poetry, history, and morals, are the branches chiefly cultivated. Arts are generally casual inventions, and long practised before the rules and principles on which they are founded assume the form of science. But morality is that art which men have most constantly occasion to practise. Besides, we are so constituted that human actions, and the events which befall human beings, have more powerful influence than any other object to engage our attention. Though poetry, history, and morals, be pursued with no small eagerness and success in that period of society which we now consider, natural philosophy is neither very generally nor very successfully cultivated. This is the period when human virtue and human abilities shine with most splendor. Rudeness, ferocity, and barbarism are banished. Luxury has made her appearance; but as yet she is the friend and the benefactress of society. Commerce has stimulated and rewarded industry, but has not yet contracted the heart and debased the character. Wealth is not yet become the sole object of pursuit. The charms of social intercourse are known and relished; but domestic duties are not yet deserted for public amusements. The female sex acquire new influence, and contribute much to refine and polish the manners of their lords. Religion now assumes a milder and more pleasing form; splendid rites, magnificent temples, pompous sacrifices, and gay festivals, give even superstition an influence favorable to the happiness of mankind. The gloomy notions and barbarous rites of former periods fall into disuse. The system of theology produced in former ages still remains: but only the mild and amiable qualities of the deities are celebrated; and none but the gay, humane, and laughing divinities, are worshipped. Philosophy also teaches men to discard such parts of their religion as are unfriendly to good morals, and have any tendency to call forth or cherish unsocial sentiments in the heart. War (for in this period of society enough of causes will arise to arm one nation against another)—war, however, no longer retains its former ferocity; nations no longer strive to extirpate one another; to procure redress for real or imaginary injuries: to humble, not to destroy, is now its object. Prisoners are now no longer murdered in cold blood, subjected to horrid and excruciating tortures, or condemned to hopeless slavery. They are ransomed or exchanged; they return to their country and again fight under its banners. In this period the arts of government are likewise better understood, and practised so as to contribute most to the interests of society. Whether monarchy, or democracy, or aristocracy, be the established form, the rights of individuals and of society are in general respected. The interests of society are so well understood that the few, to preserve their influence over the many, find it necessary to act rather as the faithful servants than the imperious lords of the public. Though the liberties of a nation in this state be not accurately defined by law, nor their property guaran-

teed to them by any legal institutions, yet their governors dare not violate their liberties, nor deprive them wantonly of their properties. This is truly the golden age of society; every trace of barbarism is entirely effaced; and vicious luxury has not yet begun to sap the virtue and the happiness of the community. Men live not in listless indolence; but the industry in which they are engaged is of such a nature as not to overpower their strength or exhaust their spirits. The social affections have now the strongest influence on men's sentiments and conduct.

#### SECT. VIII.—OF THE DEGENERACY AND DECLINE OF SOCIETY.

Human affairs are never stationary. The circumstances of mankind are almost always changing, either growing better or worse. Their manners are ever in a fluctuating state. They either advance towards perfection or degenerate. Scarcely have they attained that happy period in which we have just contemplated them, when they begin to decline till they perhaps fall back into a state nearly as low as that from which we suppose them to have emerged. Instances of this unhappy degeneracy often occur in the history of mankind; and we may finish this short sketch of the history of society by mentioning in what manner this degeneracy takes place. Strictly speaking, every thing but the simple necessities of life may be denominated luxury; but the welfare of society is best promoted, while its members aspire after something more than the mere necessities of life. As long as these superfluities are to be obtained only by active and honest exertion; as long as they only engage the leisure hours, without becoming the chief objects of pursuit—the employment which they give to the faculties is favorable both to the virtue and the happiness of the human race.

But the period arrives when luxury is no longer serviceable to the interests of nations; when she is no longer a graceful, elegant, active form, but a languid, overgrown, and bloated carcass. The love of luxury, which contributed so much to the civilisation of society, now brings on its decline. Arts are cultivated and improved, and commerce extended, till enormous opulence be acquired; the effect of enormous opulence is to awaken the fancy to conceive ideas of new and capricious wants, and to enflame the breast with new desires. Here we have the origin of that selfishness which, operating in conjunction with caprice, and the violence of unbridled passions, contributes so much to the corruption of virtuous manners. Selfishness, caprice, indolence, effeminacy, all join to loosen the bonds of society, to bring on the degeneracy both of the useful and the fine arts, to banish at once the austere and the mild virtues, to destroy civil order and subordination, and to introduce in their room anarchy or despotism.

Scarcely could we have found in history an example of the beautiful form of society which we last attempted to describe. Never, at least, has any nation continued long to enjoy such happy circumstances, or to display so amiable and respectable a character. But, when we speak of the declining state of society, we have no difficulty

in finding instances. History tells us of the Assyrians, the Egyptians, and the Persians, all once flourishing nations, but brought low by luxury and corruption of manners. The Greeks, the Romans, and the Arabians, owed their fall to the same causes ; and we know not if a similar fate does not now threaten many of those nations who have long made a distinguished figure in the system of Europe. The Portuguese, the Venetians, and the Spaniards, have already fallen. The French also had long been a people destitute of religion, corrupted in morals, unsteady in conduct, and slaves to pleasure and public amusements. Among them luxury had arrived at its highest pitch before the revolution ; and the consequence was, that, after gloriously shaking off the yoke of despotism, they set up a republican government, which, in the course of a few years, exhibited scenes of tyranny, oppression, and bloodshed, to which the annals of the world furnished scarcely a parallel ; and after which the massacre of the greatest men, and the best friends of liberty in the republic, ended in the establishment of an imperial despotism, more enormous, and more destitute of every spark of freedom than that which was overthrown in 1789—91. See FRANCE.

## PART II.

### AN ACCOUNT OF VARIOUS PUBLIC SOCIETIES FOR THE PROMOTION OF RELIGION AND MORALS, THE ARTS, SCIENCES, &c.

The societies under consideration are associations voluntarily formed by a number of individuals for promoting knowledge, industry, or virtue. They may, therefore, be divided into three classes : societies for promoting science and literature, societies for encouraging and promoting arts and manufactures, and societies for diffusing religion and morality, and relieving distress. Societies belonging to the first class extend their attention to all the sciences and literature in general, or devote it to one particular science. The same observation may be applied to those which are instituted for improving arts and manufactures. Those of the third class are established either with a view to prevent crimes, as the Philanthropic Society ; for the diffusion of the Christian religion among unenlightened nations, as the Society for the Propagation of the Gospel in Foreign Parts, and the various Missionary Societies ; or for introducing arts and civilisation, along with a knowledge of the Christian religion, as the late Sierra Leonia Company, &c.

The honor of planning and instituting societies for these valuable purposes is due to modern times. A literary association is said to have been formed in the reign of Charlemagne (See ACADEMY) ; but the plan seems to have been rude and defective. Several others were instituted in Italy in the sixteenth century ; but they seem to have been far inferior to those which are flourishing at present. The most enlarged idea of literary societies seems to have originated with the great Bacon, lord Verulam, the father of modern philosophy, who recommended to the reigning prince to institute societies of learned men, who should give to the world a regular account of their researches and discoveries. It was the idea

of this great philosopher, that the learned world should be united into one immense republic ; which, though consisting of many detached states, should preserve a mutual intelligence with each other, in every thing that regards the common interest. The want of this union and intelligence he laments as one of the chief obstacles to the advancement of science ; and, justly considering the institution of public societies to be the best remedy for that defect, he has given, in his fanciful work, the New Atlantis, the delineation of a philosophical society on the most extended plan, for the improvement of all arts and sciences ; a work which, though written in the form of a romance, is full of the noblest philosophical views. The plan of lord Verulam, which met with little attention from the age in which he lived, was destined to produce its effect in a period not very distant. The scheme of a philosophical college by Cowley had a powerful influence in procuring the establishment of the Royal Society of London by charter from Charles II. ; and Cowley's plan is manifestly copied in almost all its parts from that in the New Atlantis. The institution of the Royal Society of London was soon followed by the establishment of the Royal Academy of Sciences at Paris ; and these two served as models to the philosophical academies of the highest reputation in the other kingdoms of Europe.

Men united together, and frequently meeting for the purpose of advancing the sciences, arts, agriculture, manufactures, and commerce, oftentimes suggest such hints to one another as may be improved to important ends ; and such societies, by being the repositories of the observations and discoveries of the learned and ingenious, from time to time furnish the world with useful publications which might otherwise be lost : for men of ingenuity and modesty may not choose to risk their reputation, by sending abroad unpatronised what a learned society might judge richly worthy the public eye ; or, their circumstances being straitened, they may not be able to defray the expense of publication. Societies instituted for promoting knowledge are also of eminent service, by exciting a spirit of emulation, and by enkindling those sparks of genius which otherwise might for ever have been concealed ; and by rewarding the exertions of the industrious and enterprising with pecuniary premiums or honorary medals. Eminent instances of the beneficial effects of such institutions we have in the Academy of Sciences in Paris, the Royal Society, and the Society instituted for the Encouragement of Arts, Manufactures, and Commerce, in London, and many others of a similar kind. Hereby a spirit of discovery and improvement has been excited among the ingenious in almost every nation ; knowledge of various kinds, and greatly useful to mankind, has superseded the dry and uninteresting speculations of schoolmen ; and bold and erroneous hypothesis has been obliged to give way to demonstrative experiment. In short, since the establishment of these societies, solid learning and philosophy have more increased than they had done for many centuries before. As to those societies established for promoting industry, religion, and morality, and relieving

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distress, they present a beautiful picture of the philanthropy of modern times.

In our selection of a few of the principal associations of this kind we begin with—

### SECT. I.—RELIGIOUS AND HUMANE SOCIETIES.

In the article *BIBLE SOCIETIES*, which contains an account of one of the most important modern institutions of this character, we have promised to treat distinctly of the Society for Promoting Christian Knowledge, the Society for Propagating the Gospel in Foreign Parts, and the Naval and Military Bible Society. We cannot better redeem the pledge than by treating of them first in this place.

*The Society for Promoting Christian Knowledge* was founded in 1699. Its original design was to propagate religion in the plantations, to secure the pious education of the poor at home, and to reclaim those that err in the fundamentals of Christianity. In the year 1701 it had procured considerable donations, and had transmitted the same to the plantations in libraries, bibles, catechisms, &c., with a voluntary maintenance for the several ministers to be employed in the plantations. But, the Society for Propagating the Gospel in Foreign Parts being then instituted, they were incorporated, by charter, into the same: and thus discharged, as a particular society, from the farther pursuit of that branch of their original design which comprehended the appointment and payment of missionaries, as well as the distribution of books; whereupon they wholly turned themselves to the other, and became very considerable by great accessions from among the clergy and laity.

The members of the existing society meet weekly at the society's office in Bartlett's Buildings, Holborn, to concert measures for raising charity for the education of poor children, and setting up schools for that purpose; as also for the more regular disposal of pious books and catechisms, for instruction of the ignorant, erroneous, &c. They have procured subscriptions for the education of many thousand children, who are placed out in schools about London, and taught reading, writing, psalmody, &c. They have dispersed great numbers of books among the poor, in the fleet, army, &c., and have procured several to be translated into Welsh, and other foreign languages, and dispersed accordingly. This society is supported exclusively by members of the church of England, and it was for some time considered that the Bible Society of modern times would materially injure its operations: but none of the predictions of modern prophets have been found more wild; since that institution has arisen, the funds of this have been most decidedly improved, and its prosperity manifestly increased. They have three treasurers, a secretary, assistant, clerk, and collector, with two assistants.

The object of this institution is expressed in its name; and the general designs in which it is now engaged, are,—

First, The superintendence and support of charity schools in and about the metropolis. In this department a very important channel for extending still farther its benefits was opened

by the institution of the National Society for the Education of the Poor in the Principles of the Established Church, in 1811. About 1790 schools are already in union with this institution; and it is computed that the whole number of children who benefit by the national system of education must exceed 300,000.

Secondly, The dispersion of bibles, prayer-books, and other religious publications, of which it has circulated an incredible number, and in different languages.

Thirdly, The establishment and support of missions and schools, which have been attended with considerable success in different parts of the East Indies, both among the Europeans and the natives. The public is further indebted to this truly venerable society for its late exertions in printing and circulating, at a low price, many anti-infidel publications, with a view to counteract the baneful effects of those poisonous productions which are still disseminated, with shameless impudence and unwearied diligence, through the remotest districts of the land.

The Report, 1822, states that the number of subscribing members now amounts to 14,650, and that the number of books and tracts issued during the year was not less than 1,222,382. See A Summary Account of the Society for Promoting Christian Knowledge, with Catalogues of the Books, 1821; or the society's Annual Reports, to which are prefixed the Anniversary Sermons.

*The Society for Propagating the Gospel in Foreign Parts* was instituted by king William III. in 1701, to secure a maintenance for an orthodox clergy, and making other provisions for the propagation of the gospel in the plantations, colonies, factories, &c.: to this end he incorporated the archbishops, several bishops, and others of the nobility, gentry, and clergy, to the number of ninety, into a body, with privilege to purchase £2000 a year inheritance, and estates for lives or years, with other goods, to any value. The society is directed by its charter to meet yearly, on the third Friday in February, to choose a president, vice-president, and other officers; and the third Friday in every month to transact business, depute fit persons to take subscriptions for the said uses, and of all monies so received to give account to the lord chancellor, &c. Of this society there is a standing committee at St. Paul's Chapter-house, who prepare matters for the monthly meeting, which is held at St. Martin's library. They are trustees of Codrington College, in Barbadoes, supported by plantations in that island.

*The Naval and Military Bible Society* was instituted in 1780, for the purpose of distributing bibles among the soldiers and sailors of the army and navy. One guinea constitutes a governor, and ten guineas a governor for life. It has also flourished much more decidedly since the institution of the British and Foreign Bible Society. See the article *BIBLE SOCIETIES*.

*The Society of the Sons of the Clergy* was incorporated by king Charles II. in 1678 by the name of The Governors of the Charity for Relief of the Poor Widows and Children of Clergymen. This society is under the direction and

management of a president and vice-president, three treasurers, and a court of assistants composed of forty members. Several hundreds of widows and children of the clergy have annually received considerable relief from this useful charity. It is sometimes called the Corporation of the Sons of the Clergy.

The annual feast of the sons of the clergy appears to be prior to their incorporation; for in the London Gazette of November 22, 1677, the annual feast of the sons of the clergy was advertised to be held at Merchant Taylors' Hall, on Thursday the 29th of November following. Since the year 1697 there has been constantly an annual sermon, and also a grand musical service at the cathedral church of St. Paul, for promoting the ends of this charity. The most eminent divines of the church have preached on these occasions, and the musical performance has acquired celebrity from the concurrence of eminent persons of the profession. For many years past it has been the practice of the stewards of the corporation to have at St. Paul's, on the Tuesday preceding the day of the sermon, what is called a rehearsal of the performance, and also a collection for the charity. The corporation is generally under the management of the archbishop of Canterbury as president.

*The Society of the Sons of the Clergy of the Established Church of Scotland* was instituted at Edinburgh in February 1790, and was constituted a body corporate by royal charter in 1792. The society is of opinion that the period in which the families of clergymen feel most urgently the need, both of friends and of pecuniary aid, is that which commences with the introduction of the sons either to a university or to business, and terminates with their establishment in their respective professions; that many of the ministers of this church, living at great distances from the seats either of universities or of business, possess incomes which, in the present state of the country, are inadequate to the purposes of procuring for their sons either the literary or professional education, which might enable them to come forward with credit and success in the world; that the sons of clergymen, from domestic tuition and example, have in general very advantageous means of receiving in their early years the impressions of virtue and honor, together with the rudiments of liberal knowledge; and that of course the public interest may be promoted by enabling this class of young men to obtain their share in the respectable situations of life. The views of the society have therefore been limited to the sons only of clergymen; as they are of opinion that, within the limits which they have fixed, the field of beneficence will be still very extensive, and the claims for aid as many and as great as their funds can be supposed able to answer.

*The Royal Humane Society* was instituted in London in 1774, for the recovery of persons drowned or otherwise suffocated. We have therefore only to state that this society is founded on the most disinterested principles. The medical practitioners accept no pecuniary recompence for the time which they devote to a difficult and tedious process; for the anxiety which

they feel while the event is doubtful; for the mortification which they too often undergo, when death, in spite of all their efforts, at last carries off his prey; nor for the insults to which they willingly expose themselves from vulgar incredulity. Their sole reward is in the holy joy of doing good. Of an institution thus free in its origin from all interested views, and in its plan renouncing self-interest in every shape, philanthropy must be the only basis. The good intention therefore of the society is proved by its constitution; the wisdom and utility of the undertaking are proved by its success: not less than 3000 fellow-creatures having, from its commencement till 1794, been restored to the community by its timely and indefatigable exertions. Nor is the benefit of this society confined to the cases of drowning and suspension. Its timely succors have roused the lethargy of opium taken in immoderate and repeated doses; rescued the wretched victims of intoxication; rekindled the life extinguished by the sudden stroke of lightning; recovered the apoplectic; restored life to the infant that had lost it in the birth; they have proved efficacious in cases of accidental smothering and of suffocation by noxious damps, in instances in which the tenderness of the infant body or the debility of old age greatly lessened the previous probability of success; insomuch that no species of death seems to be placed beyond the reach of this society's assistance, where the mischief has gone no farther than an obstruction of the movements of the animal machine without any damage of the organs. In consequence of every necessary assistance afforded by this society, similar institutions have been established at Algiers, Lisbon, Philadelphia, Boston, Jamaica, Dublin, Leith, Glasgow, Aberdeen, Birmingham, Gloucester, Shropshire, Northamptonshire, Lancaster, Bristol, Whitehaven, Norwich, Exeter, Kent, and Newcastle. The society has published an 8vo. volume with plates, consisting of cases, correspondence, and a variety of interesting matter relating to the objects of this benevolent institution.

*The Philanthropic Society* was instituted in September 1788. It aims at the prevention of crimes, by removing out of the way of evil council, and evil company, those children who are, in the present state of things, destined to ruin. It proposes to educate and instruct in some useful trade or occupation the children of convicts, or other infant poor, who are engaged in vagrant or criminal courses; thus to break the chain of those pernicious confederacies, deprive the wicked of successors, the gaols of inhabitants, justice of its victims, and by all these means add citizens to society. This institution is not only calculated to decrease vice and infamy, but to increase useful industry; so that those children who would otherwise succeed to their parents' hereditary crimes, and become the next race of beggars and thieves, will now be taught to supply by honest means their own wants and the wants of others. To carry into effect these desirable purposes, it is the first business of the society to select from prisons, and from the haunts of vice, profligacy, and beggary, such objects as appear most likely

become obnoxious to the laws, or prejudicial to the community ; and, in the execution of this duty, the assistance of the magistrates, the clergy, and all who are interested in the promotion of good morals and good government, is most earnestly requested. For the employment of the children, several houses are supported, at Cambridge Heath, near Hackney, in each of which a master-workman is placed for the purpose of teaching the children some useful trade. The trades already established are those of a printer, carpenter, shoemaker, and taylor. The girls are at present educated as menial servants. In 1791 no fewer than seventy children were under the protection of this society, among whom were many who had been guilty of various felonies, burglaries, and other crimes. Yet, singular as it may appear, in less than two years those very children became no less remarkable for industry, activity, decency, and obedience, than they formerly were for their contrary vices. Such are the grounds on which the Philanthropic Society now claims the attention and solicits the patronage of the public. If we regard humanity and religion, this institution opens an asylum to the most forlorn and abject of the human race ; it befriends the most friendless ; it saves from the certain and fatal consequences of infamy and vicious courses orphans and deserted children. If we regard national prosperity, and the public welfare, it is calculated to increase industry ; and it directs that industry into the most useful and necessary channels. If we regard self-interest, its immediate object is to protect our persons from assault and murder, our property from depredation, and our peaceful habitations from the desperate fury of midnight incendiaries. One guinea per annum constitutes a member of the society ; and £10 at one payment a member for life. A life subscription, or an annual payment of at least two guineas, is a necessary qualification for being elected into the committee.

Objects are admitted by the committee at its weekly meetings ; and they are seldom taken younger than eight or nine, or older than twelve. After admission boys that have been delinquents are sent in the first instance to the 'Reform,' a house at Bermondsey so called ; where the system is framed with a view to the amendment of the moral character by instruction : out of school-hours they are set to pick oakum, that by remaining unemployed they may not acquire habits of idleness. When any of them appear, by the reports of the chaplain, to be sufficiently reformed, they are transferred to the manufactory in St. George's Fields, now the principal establishment of the Society, and placed on the same footing with the rest of the boys in that situation. The sons of convicts, not having been themselves criminal, are sent at once to the manufactory, which contains, besides accommodations for lodging about 100 boys, workshops for carrying on the following trades, viz. printing, copper-plate printing, book-binding, shoe-making, tailor's work, rope-making, and twine-spinning. The profits of the trades are carried to the account of the society, a portion being appropriated, by way of reward, to such of the boys as are industrious, partly paid to them immediately, and partly reserved for their use when they cease to

belong to the society. The girls are placed in a building contiguous to the manufactory ; but all intercourse between them and the boys is effectually prevented by a wall of considerable height. The girls are brought up for menial servants : they make their own clothing, and shirts for the boys, and wash and mend for the manufactory : besides which their earnings in plain work are considerable. When of proper age they are placed out, at low wages, in reputable families, and receive rewards for good behaviour at the end of the first and third years of their service, viz. one guinea at each period. A chapel has been erected for the convenience of their attending public worship.

Every general court must consist of seven members at least ; and the committee, which consists of twenty-four members, together with the principal officers, visitors, and auditors, meet once a week, and three of them are competent to proceed to business. They appoint sub-committees. A number of boys having served a regular apprenticeship in the society's manufactory, and received certificates of their honesty and industry during the latter part of their service, are now employed in town as journeymen to respectable masters ; and many of the girls are in service, and have received the pecuniary rewards assigned them. The present officers are a president, twelve vice presidents, a treasurer, four visitors, three auditors, a chaplain, chapel-reader, and seretary, two preachers, a physician, surgeon, apothecary, superintendent, and steward.

*The Church Missionary Society.*—This institution, which was established in 1801, and whose original object was to diffuse the knowledge of Christianity in Africa and the East, is conducted by members of the Church of England, under the patronage of various peers spiritual and other distinguished clergymen. After twenty years of patient labor in this good work, it has been blessed with a measure of success which calls for unfeigned gratiude, and animates its conductors to further exertions. In support of these exertions there have been formed, within the last few years, upwards of 400 different associations, the simple design of all which has been to offer to such persons, in each neighbourhood, as might feel inclined to subscribe, the opportunity of doing it with the least inconvenience. The exciting also of a spirit of prayer for the blessing of God on the society, and the stimulating of proper persons to offer themselves as missionaries, were among the objects in view. Its funds arise chiefly from annual subscriptions, benefactions, weekly and monthly contributions, and congregational collections. And the result of these efforts has been, that, in the year ending March 31st, 1822, about £32,000 was received, and nearly the same sum expended.

The foreign proceedings of the Society may be arranged under nine missions, which are here mentioned, in the order wherein the society entered upon them. 1. The West African ; 2. The Calcutta and North Indian ; 3. The Australasia ; 4. The Madras and South India ; 5. The Mediterranean ; 6. The West Indies ; 7. The Ceylon ; 8. The Bombay and Western India and 9. The North-west America.

In these Missions there were in January 1823 about forty stations, with a number of schools dependent on them. These stations are occupied by about ninety Europeans, who have been sent forth from this country to the different missions. Of these thirty-two are ordained missionaries; twenty-four are wives of missionaries, and the rest are lay teachers and settlers, male and female. Of native laborers there are about 160; two of whom are ordained missionaries, and the others readers, catechists, teachers, and assistants. The number of scholars, adults and children, cannot be exactly ascertained; but it appears, from the last returns, to be about 10,500. In several places churches have been built, and many converts have been added to the church.

It may in truth be said that the blessing of God has rested on these and other missions, very much in proportion to the length of time since they were established, the number of laborers, and the concurrence of providential openings and other favorable circumstances. The success, however, has been most remarkable in the first mission, that to West Africa; while its trials and difficulties also have been the most severe.

It enters into the plan of the society to employ the press very widely in the diffusion of missionary information. It has opened a communication with various foreign institutions, and distributed its reports, and copies of the *Missionary Register*, with other publications, very extensively, both at home and abroad. Translations and editions of the Scriptures claim attention from every missionary society; and, from the institutions connected with the united church, the translation of its primitive liturgy will obtain especial regard. In various languages of Mahometans and heathens, this society has accordingly rendered, in different ways, every assistance to these objects. Tracts also in various languages are prepared and widely circulated, more particularly in the Mediterranean and Indian Missions.

The Proceedings of the Society, which are published annually, contain twenty-two sermons and reports, and form ten volumes, 8vo.

*The Society in Scotland for Propagating Christian Knowledge.*—This institution, which is connected with the established Kirk, has been highly useful in promoting religion, morality, and industry, among the lower order of the natives in the highlands and islands, many of whom reside at a very great distance from any kirk or parish school.

It derived its origin from the benevolence and public spirit of a few private gentlemen, who, early in the last century, formed themselves into a society for the reformation of manners, by diffusing the knowledge of divine truth. ‘Directing their attention to the mountainous regions of their own country and the islands connected with it, in which the inhabitants were in a state of deplorable ignorance, and cut off from all access to religious instruction, a society was founded in 1703 under the title of ‘the Society for Propagating Christian Knowledge in the Highlands and Islands.’ The object of the society, which received from queen Anne a royal charter, and which was warmly supported by the general assembly of the Scottish Church, has been, ever

since its institution, to establish schools in which the elements of education are taught, to circulate the Scriptures, and to appoint missionary teachers in parishes which, from their immense extent, or their inaccessible situation, could not enjoy the advantage of the religious establishment under which they were placed. This admirable society has most deservedly obtained cordial support. A donation from the sovereign is annually made to it, which is under the control of a committee of the General Assembly; a sermon is yearly preached, and many pious and benevolent individuals have contributed to enlarge the funds of which it is possessed. Its labors have been attended with much success; ignorance has been banished from many districts in which it would else have remained, and the humanising influence of religion has corrected the previous habits which had for ages been acquiring strength.’

This society supports about 300 schools, in which nearly 20,000 disciples of both sexes are trained up in the knowledge of religion and good morals, writing, and arithmetic, and various useful arts, and in habits of industry. The schoolmasters teach the old, as well as the young, from house to house, on week days, when not employed in the schools; and on Sundays they read the Scriptures, and other pious books, to the inhabitants of the district assembled, sometimes in the open air—catechise the children in the presence of their parents and friends, and preside among them in the duties of prayer and praise.

The funds of the society now amount to upwards of £90,000; but the restrictions of its charter do not permit any encroachment on the capital.

An institution, entitled *The Society for the Support of Gaelic Schools in the Highlands and Islands of Scotland*, and chiefly supported, we believe, by dissenters, has lately been formed, for carrying more extensively into effect the instruction of the people in the highlands. Its schools are chiefly formed on the ambulatory plan, as considered to be best adapted to the nature of the country; and much good is daily effected by its active co-operation with the venerable society. No language can do justice to the beneficial and active exertions of numerous other societies, established and supported by various religious communities for diffusing the knowledge and benefits of Christianity throughout the world. Among these we may specify, the African Institution, for the Civilisation of Africa, the Education of Native Youth, &c., founded in 1806. The London Society for the Conversion of the Jews, established in 1809, and now wholly conducted by the members of the United Church. The Prayer-book and Homily Society, 1811. The Protestant Episcopal Missionary Society in the United States, for Foreign and Domestic Missions, 1820. Each of the other four principal denominations of Christians in the United States, viz. the Congregationalists, the Presbyterians, the Baptists, and the Methodists, has now a missionary society in connexion with it, which directs its attention to foreign objects, as well as to the Indians within the union. And see Dr. W. Brown's History of the Propa-

gation of Christianity among the Heathen since the Reformation, 3 vols. 8vo. 1814; and the Missionary Register, a periodical work replete with new and valuable information respecting the labors and success of the societies.

*The Society for Promoting Christianity among the Jews, London*, merits, perhaps, more distinct notice. It was instituted in August 1808, and was at first conducted under the management of a committee consisting of eighteen members, churchmen and dissenters, besides the treasurer and secretary, five of whom were a quorum; and met on the first Friday in every month at the Jews' Chapel in Spitalfields. The object of this society was at first to relieve the temporal distresses of the Jews, as well as to promote their spiritual welfare; the committee, therefore, was empowered, from time to time, to adopt such measures for any such purposes as the majority of the members present should approve. General meetings were held twice in the year for receiving the reports of the committee; and two collection sermons preached at each of the half-yearly meetings, for the benefit of the society, one in the established church, and the other among the dissenters. Of late years the society has passed, we believe, wholly into the hands of the churchmen, and temporal relief is rarely or never granted by it to the Jews; but the Scriptures and tracts advocating Christianity are largely distributed by it both at home and abroad.

*The Philo-Judean Society* of London is of a very similar description with the above, only that it is supported both by churchmen and dissenters; that it distributes according to the original plan of the Jews' society temporal relief, and invites to the debate and investigation of prophecy, on which its directors entertain some peculiar opinions.

*The Sunday School Society* was established in 1796 for promoting free and Sunday schools in Wales, under the patronage of the prince of Wales. Its officers are a president, vice-president, treasurer and vice-treasurer, and secretary. A society for promoting Sunday schools throughout the British dominions was instituted in 1785. See EDUCATION.

*The Society for the Suppression of Vice* was established in Essex Street in the Strand in 1802. Its officers are a president, twelve vice-presidents, a treasurer, a secretary, and collector.

*The National Society*, for promoting the education of the poor in the principles of the established church, in England and Wales, was instituted in 1811. The prince of Wales was patron, and the archbishop of Canterbury president: it has a great number of vice-presidents, including all the bishops, a treasurer, and secretary, and has done great good.

A very meritorious society, for the Discharge and Relief of Persons Imprisoned for Small Debts must not be omitted here. It was instituted in February 1772. The debts, or composition for them, of the persons that are relieved must not exceed £10; and the aged and infirm are preferred, as well as those that have the largest families, and others who have lost their liberty by unavoidable misfortunes, and not by fraud, vice, or extravagance. No debtor can be relieved a second time. The annual subscrip-

tions are two guineas, and those for life are twenty guineas. Similar in its object is the Philanthropic Society at Mile-End; the annual subscription being only twelve shillings, and five guineas constituting a life-governor.

*The Society for the Establishment of a Literary Fund* was instituted A. D. 1790, for the relief of authors in distress, whose claims, stated in writing to the committee, are duly considered by them, and admitted, if proper, at their discretion, whilst the names of the applicants are not disclosed. The annual subscription is one guinea, and that for life is ten guineas. The society's house is in Gerard-street, Soho.

## SECT. II.—OF SOCIETIES FOR PROMOTING SCIENCE AND LITERATURE.

*The Royal Society of London* is an academy or body of persons of eminent learning, instituted by Charles II. for the promoting of natural knowledge. The origin of this society is traced by Dr. Sprat, its earliest historian, no farther back than to 'some space after the end of the civil wars,' in the seventeenth century. The scene of the first meetings of the learned men who laid the foundation of it is fixed by him in the University of Oxford, at the lodgings of Dr. Wilkins, warden of Wadham College. But Dr. Birch, on the authority of Dr. Wallis, one of its earliest and most considerable members, assigns it an earlier origin. According to him certain worthy persons, residing in London about 1645, being 'inquisitive into natural and the new and experimental philosophy, agreed to meet weekly on a certain day, to discourse upon such subjects, and were known by the title of The Invisible or Philosophical College.' In 1648 and 1649 the company who formed these meetings were divided, part retiring to Oxford and part remaining in London; but they continued the same pursuits as when united, corresponding with each other, and giving a mutual account of their respective discoveries. About 1659 the greater part of Oxford Society returned to London; and, again uniting with their fellow-laborers, met once, if not twice, a-week, at Gresham College, during term time, till they were scattered by the public distractions of that year, and the place of their meeting made a quarter for soldiers. On the Restoration, in 1660, their meetings were revived, and attended by a greater concourse of men eminent for their rank and learning. They were at last taken notice of by the king, who, having himself a considerable taste for physical science, gave them an ample charter, dated the 15th of July, 1662, and afterwards a second, dated the 15th of April, 1663, by which they were erected into a corporation, consisting of a president, council, and fellows, for promoting natural knowledge: and to give their investigations, against which strange prejudices were entertained, every possible support, he sometimes honored their meetings with his presence.

Their manner of electing fellows is by balloting. Their council are in number twenty-one, including the president, vice-president, treasurer, and two secretaries; eleven of whom are continued for the next year, and ten more added to

them; all chosen on St. Andrew's day. Each member at his admission subscribes an engagement that he will endeavour to promote the good of the society; from which he may be freed at any time, by signifying to the president that he desires to withdraw. The charges are five guineas paid to the treasurer at admission, and 13s. per quarter so long as the person continues a member: or, in lieu of the annual subscription, a composition of twenty-three guineas in one payment. Their design is to 'make faithful records of all the works of nature or art which come within their reach; so that the present as well as future ages may be enabled to put a mark on errors which have been strengthened by long prescription; to restore truths that have been neglected; to push those already known to more various uses; to make the way more passable what remains unrevealed,' &c. To this purpose they have made a great number of experiments and observations on most of the works of nature; and also numbers of short histories of nature, arts, manufactures, useful engines, contrivances, &c. The services which they have rendered to the public are very great. They have improved naval, civil, and military architecture; advanced the security and perfection of navigation; improved agriculture; and put not only this kingdom, but also Ireland, the plantations, &c., upon planting. They have registered experiments, histories, relations, observations, &c., and reduced them into one common stock; and have, from time to time, published those which they reckoned most useful, under the title of Philosophical Transactions, &c., and laid the rest up in public registers, to be transmitted to posterity as a solid ground-work for future systems.

They have a library adapted to their institution; towards which Mr. Henry Howard, afterwards duke of Norfolk, contributed the Norfolkian library, which is now greatly increased by a continual series of benefactions. The museum of natural and artificial rarities, given them by Daniel Colwell, esq., and since enriched by many others, is now removed to the British Museum, and makes a part of that great repository. Their motto is Nullius in verba; and their place of assembling is Somerset House, in the Strand. Sir Godfrey Copley, bart., left five guineas to be given annually to the person who should write the best paper in the year, under the head of experimental philosophy. This reward, which is now changed to a gold medal, is the highest honor the society can bestow. It is conferred on St. Andrew's day.

*The Royal Society of Edinburgh* was incorporated by royal charter on the 29th of March, 1783, and has for its object the cultivation of every branch of science, erudition, and taste. Its rise and progress towards its present state was as follows: in 1718 a literary society was established in Edinburgh by the learned Ruddiman and others, which in 1731 was succeeded by a society instituted for the improvement of medical knowledge. In 1739 the celebrated MacLaurin conceived the idea of enlarging the plan of this society, by extending it to subjects of philosophy and literature. The institution was accordingly new-modelled by a printed set of

laws and regulations, the number of members was increased, and they were distinguished from that time by the title of The Society for Improving Arts and Sciences, or more generally by the title of The Philosophical Society of Edinburgh. Its meetings, however, were soon interrupted by the disorders of the country during the rebellion in 1745; and they were not renewed till 1752. Soon after this period the first volume of the Transactions of the Philosophical Society of Edinburgh was published, under the Title of Essays and Observations, Physical and Literary, and was followed by other volumes of acknowledged merit. About the end of 1782, in a meeting of the professors of the university of Edinburgh, many of whom were likewise members of the society, a scheme was proposed by the Rev. Dr. Robertson, principal of the university, for the establishment of a new society on a more extended plan, and after the model of some of the foreign academies. It appeared an expedient measure to solicit the royal patronage to an institution of this nature, which promised to be of national importance, and to request an establishment by charter from the crown. The plan was approved and adopted; and the Philosophical Society, joining its influence as a body in seconding the application from the university, his majesty was most graciously pleased to incorporate the Royal Society of Edinburgh by charter. This society consists of ordinary and honorary members; and the honorary places are restricted to persons residing out of Great Britain and Ireland. The election of new members is appointed to be made at two stated general meetings, which are to be held on the fourth Monday of January, and the fourth Monday of June. A candidate for the place of an ordinary member must signify by a letter, addressed to one of the members, his wish to be received into the society. He must then be publicly proposed at least a month before the day of election. If the proposal be seconded by two of the members present, his name is to be inserted in the list of candidates, and hung up in the ordinary place of meeting. The election is made by ballot, and is determined in favor of a candidate, if he shall have the votes of two-thirds of those present, in a meeting consisting of at least twenty-one members. The general business of the society is managed by a president, two vice-presidents, with a council of twelve, a general secretary, and a treasurer. These officers are chosen by ballot annually on the last Monday of November. All public deeds, whether of a civil or of a literary nature, are transacted by this board, and proceed in the name of the president or vice-president.

The society is divided into two classes, which meet and deliberate separately. The physical class has for its department the sciences of mathematics, natural philosophy, chemistry, medicine, natural history, and whatever relates to the improvement of arts and manufactures. The literary class has for its department, literature, philology, history, antiquities, and speculative philosophy. Every member is desired at his admission to intimate which of those classes he wishes to be more particularly associated with;

but he is at the same time entitled to attend the meetings of the other class, and to take part in all its proceedings. Each class has four presidents and two secretaries, who officiate by turns.

At these meetings the written essays and observations of the members of the society, or their correspondents, are read publicly, and become the subjects of conversation, after having been announced at a previous meeting. The author of each dissertation is desired to furnish the society with an abstract of it, to be read at the next meeting, when the conversation is renewed with increased advantage, from the knowledge previously acquired of the subject. At the same meetings are exhibited such specimens of natural or artificial curiosities, such remains of antiquity, and such experiments as are thought worthy of the attention of the society. All objects of natural history presented to the society are ordered by the charter of the institution to be deposited, on receipt, in the museum of the university of Edinburgh; and all remains of antiquity, public records, or ancient MSS., in the library belonging to the faculty of advocates at Edinburgh.

Several volumes of the Transactions of the Society have been published, which bear ample testimony to the learning and acuteness of their various authors.

*The Society of Scottish Antiquaries* is another respectable literary and philosophical society, instituted at Edinburgh in 1782, and established by royal charter at the same time with the preceding. The earl of Buchan was the founder of it, and indeed may claim the merit of having given birth to both societies; for the Royal Society of Edinburgh above described, although it certainly did exist as a private philosophical society from the period above mentioned, would never, in all probability, have existed in any other form than that of a private society, if his lordship had not applied to his majesty for a royal charter to the Society of Scottish Antiquaries. An opposition unexpected, and not altogether liberal, was made to his lordship's application, by some of the old members of the Philosophical Society, but all opposition was happily quashed by his majesty's graciously granting two royal charters, and thus instituting both societies at the same time. The consequence is, that many of the most respectable literary characters in the kingdom are members of both societies. And as the objects of both are also much the same, as well as their general routine of business, it is unnecessary to enlarge farther.

*The Medical Society of London* was instituted in 1752, on the plan recommended by lord Bacon (*De Augm. Scient. lib. iv., cap. 2*), to revive the Hippocratic method of composing narratives of particular cases, in which the nature of the disease, the manner of treating it, and the consequences, are to be specified; to attempt the cure of those diseases which, in his opinion, have been too boldly pronounced incurable; and, lastly, to extend their enquiries after the powers of particular medicines in the cure of particular cases. The collections of this society have been published, under the title of *Medical Observations and Enquiries*, in several volumes.

VOL. XX.

*The Medical Society of Edinburgh* was incorporated by royal charter in 1778; but there appears to have been in that city a voluntary association of the same name from the first establishment of a regular school of physic in the university. To the voluntary society the public is indebted for six volumes of curious and useful essays, collected principally by the late Dr. Monro from June 1731 to June 1736; but in 1739 that society was united to another. The ordinary members are elected by ballot, and three dissentients exclude a candidate. The meetings of this society are held every Saturday evening in their own hall, during the winter season, when papers on medical subjects are delivered by the several members in rotation; and four of these are annually elected to fill the chair in rotation, with the title of annual presidents.

*The Royal Physical Society of Edinburgh* is another society, instituted about 1786, upon the same principles with the Medical, and conducted upon the same plan. It is also established by royal charter. This society has an elegant hall, built on purpose for its meetings, in Nicholson street, near the public dispensary, and has also an excellent library.

There is also an *Experimental Society* at Dublin, for promoting natural knowledge, which was instituted in 1777; the members meet once every week, and distribute three honorary gold medals annually for the most approved discovery, invention, or essay, on any mathematical or philosophical subject. The society is under the direction of a president, two vice-presidents, and a secretary.

*The Royal Medical Society of Paris* was instituted in 1776. It was afterwards included in the National Institute.

*The Asiatic Society*, an institution planned by the late illustrious Sir William Jones, and actually formed at Calcutta on the 15th of January, 1784, for the purpose of tracing the history, antiquities, arts, sciences, and literature, of the immense continent of Asia. As it was resolved to follow as nearly as possible the plan of the Royal Society of London, of which the king is patron, the patronage of the Asiatic Society was offered to the governor-general and council, as the executive power in the territories of the company. By their acceptance of this offer, Mr. Hastings, as governor-general, appeared among the patrons of the new society; 'but he seemed in his private station, as the first liberal promoter of useful knowledge in Bengal, and especially as the great encourager of Persian and Shanscrit literature, to deserve a particular mark of distinction:' he was requested, therefore, to accept the honorary title of president. This was handsomely declined in a letter from Mr. Hastings, in which he requested 'to yield his pretensions to the gentleman whose genius planned the institution, and was most capable of conducting it, to the attainment of the great and splendid purposes of its formation.' On the receipt of this letter, Sir William Jones was nominated president of the society; and, in his first discourse from the chair, pointed out its objects as follows:—'It is your design,' I conceive,' said he, 'to take an ample space for your learned investigations, bounding

them only by the geographical limits of Asia ; so that, considering Hindostan as a centre, and turning your eyes in idea to the north, you have on your right many important kingdoms in the eastern peninsula, the ancient empire of China with all her Tartarian dependencies, and that of Japan, with the cluster of precious islands in which many singular curiosities have too long been concealed ; before you lies that prodigious chain of mountains which formerly, perhaps, were a barrier against the violence of the sea ; and beyond them the very interesting country of Tibet, and the vast regions of Tartary, from which, as from the Trojan horse of the poets, have issued so many consummate warriors, whose domain has extended at least from the banks of the Ilyssus to the mouths of the Ganges ; on your left are the beautiful and celebrated provinces of Iran or Persia, the unmeasured, and perhaps unmeasurable, deserts of Arabia, and the once flourishing kingdom of Yemen, with the pleasant isles that the Arabs have subdued or colonised ; and, farther westward, the Asiatic dominions of the Turkish sultans, whose moon seems approaching rapidly to its wane. By this great circumference the field of your usual researches will be enclosed ; but since Egypt had unquestionably an old connexion with this country, since the language and literature of the Abyssinians bear a manifest affinity to those of Asia, since the Arabian arms prevailed along the African coast of the Mediterranean, and even erected a powerful dynasty on the continent of Europe, you may not be displeased occasionally to follow the stream of Asiatic learning a little beyond its natural boundary ; and, if it be necessary that a short name be given to our society, that of Asiatic appears both classical and proper, whether we consider the place or the object of the institution, and preferable to Oriental, which is a word merely relative, and conveys no very distinct idea.

If now it be asked, What are the intended objects of our enquiries within these spacious limits ? we answer, MAN and NATURE ; whatever is performed by the one or produced by the other. Human knowledge has been elegantly analysed according to the three great faculties of the mind, memory, reason, and imagination ; which we constantly find employed in arranging and retaining, comparing and distinguishing, combining and diversifying, the ideas which we receive through our senses or acquire by reflection : hence the three main branches of learning are, history, science, and art ; the first comprehends either an account of natural productions, or the genuine records of empires and states ; the second embraces the whole circle of pure and mixed mathematics, together with ethics and law, as far as they depend on the reasoning faculty ; and the third includes all the beauties of imagery and the charms of invention displayed in modulated language, or represented by color, figure, or sound. Agreeably to this analysis you will investigate whatever is rare in the stupendous fabric of nature, will correct the geography of Asia by new observations and discoveries ; will trace the annals and even tradition of those nations who from time to time have peopled or

desolated it ; and will bring to light their various forms of government, with their institutions civil and religious ; you will examine their improvements and methods in arithmetic and geometry ; in trigonometry, mensuration, mechanics, optics, astronomy, and general physics ; their systems of morality, grammar, rhetoric, and dialectic ; their skill in chirurgery and medicine ; and their advancement, whatever it may be, in anatomy and chemistry. To this you will add researches into their agriculture, manufactures, trade ; and whilst you enquire with pleasure into their music, architecture, painting, and poetry, will not neglect those inferior arts by which the comforts and even elegancies of social life are supplied or improved. You may observe that I have omitted their languages, the diversity and difficulty of which are a sad obstacle to the progress of useful knowledge ; but I have ever considered languages as the mere instruments of real learning, and think them improperly confounded with learning itself : the attainment of them is, however, indispensably necessary ; and if, to the Persian, Armenian, Turkish, and Arabic, could be added not only the Shanscrit, the treasures of which we may now hope to see unlocked, but even the Chinese, Tartarian, Japanese, and the various insular dialects, an immense mine would then be open, in which we might labor with equal delight and advantage.'

Of this society many volumes of Transactions have been published, which are replete with information in a high degree curious and important ; and we hope that the European world will soon be favored with another. The death of the accomplished president may indeed damp the spirit of investigation among the members ; for, to conquer difficulties so great as they must meet with, a portion seems to be necessary of that enthusiasm which accompanied all the pursuits of Sir William Jones ; but his successor is a man of great worth and learning, and we trust will use his utmost endeavours to have the plan completed of which Sir William gave the outlines.

*The American Philosophical Society*, held at Philadelphia, was formed in January, 1769, by the union of two societies which had formerly subsisted in that city. This society extends its attention to geography, mathematics, natural philosophy, and astronomy ; medicine and anatomy ; natural history and chemistry ; trade and commerce ; mechanics and architecture ; husbandry and American improvements. Its officers are a patron, president, three vice-presidents, one treasurer, four secretaries, and three curators, who are annually chosen by ballot. The duty of the president, vice-presidents, treasurer, and secretaries, is the same as in the other society. The business of the curators is to take the charge of all specimens of natural productions, whether of the animal, vegetable, or fossil kingdom ; all models of machines and instruments ; and all other matters belonging to the society which will be entrusted to them. The ordinary meetings are held on the first and third Fridays of every month from October to May inclusive. This society was incorporated by charter the 15th of March, 1780 ; and has published three volumes

of its Transactions, containing many ingenious papers on general literature and the sciences, as well as respecting those subjects peculiar to America. It is a delightful prospect to the philosopher to consider that Asia, Europe, and America, though far separated, and divided into a variety of political states, are all three combined to promote the cause of knowledge and truth.

*A Literary and Philosophical Society*, of considerable reputation, has long been established at Manchester, under the direction of two presidents, four vice-presidents, and two secretaries. The number of members is limited to fifty; besides whom there are several honorary members, all of whom are elected by ballot; and the officers are chosen annually in April. Numerous volumes of valuable essays have been already published by this society, and often quoted in our work.

The Society of Antiquaries of London was founded about the year 1572 by archbishop Parker, a munificent patron of learned men. For the space of twenty years it assembled in the house of Sir Robert Cotton; in 1589 they resolved to apply to queen Elizabeth for a charter and a public building where they might hold their meetings; but it is uncertain whether any such application was ever made. In the mean time the reputation of the society gradually increased, and at length it excited the jealousy of James I., who was afraid lest it should presume to canvas the secret transactions of his government. He accordingly dissolved it. But in 1717 the Antiquarian Society began to revive; and a number of gentlemen, eminent for their attachment to this science, had weekly meetings, in which they examined the antiquities and history of Great Britain preceding the reign of James I., but without excluding any other remarkable antiquities that might be offered to them. From this time the society grew in importance; and in 1750 they unanimously resolved to petition the king for a charter of incorporation. This they obtained, in 1751, by the influence of the celebrated earl of Hardwicke, then lord chancellor, and Martin Folkes, esq., who was then their president. The king declared himself their founder and patron, and empowered them to have a body of statutes, and a common seal, and to hold in perpetuity lands, &c., to the yearly value of £1000.

The chief object of the enquiries and researches of this society are British antiquities and history; not, however, wholly excluding those of other countries. The study of antiquity offers to the curious and inquisitive a large field for research and amusement. The enquirer in his branch furnishes the historian with his best materials, while he distinguishes from truth the fictions of a bold invention, and ascertains the credibility of facts; and to the philosopher he presents a fruitful source of ingenious speculation, while he points out to him the way of linking, and the manners of men, under all the varieties of aspect in which they have appeared.

The Horticultural Society of London was instituted in 1804, under a president, a council, three treasurers, and secretary. It has of late

greatly extended its operations, and engaged and planted handsome grounds at Chiswick.

Besides these literary societies here mentioned, there are a great number more in different part of Europe, some of which are noticed in our article ACADEMY. Those which are omitted are not omitted on account of any idea of their inferior importance; but either because we have had no access to authentic information, or because they resemble the societies, already described, so closely, that we could have given nothing but their names.

### SECT. III.—SOCIETIES FOR ENCOURAGING AND PROMOTING ARTS, MANUFACTURES, &c.

*The London Society for the Encouragement of Arts, Manufactures, and Commerce*, was instituted, in 1754, by lord Folkstone, lord Romney, Dr. Stephen Hales, and a few private gentlemen; but the merit of this institution chiefly belonged to Mr. William Shipley, an ingenious mechanic; who, though deriving no advantages from learning, by unwearied personal attendance found means to engage a few persons of rank and fortune to meet at Peel's coffee-house in Fleet Street, and to adopt a plan for promoting arts and manufactures.

The office-bearers of this society are a president, twelve vice-presidents, a secretary, and registrar. Their proceedings are regulated by rules and orders established by the whole society, and printed for the use of the members. All questions are determined by show of hands, or by ballot; and no matter can be confirmed without the assent of a majority at two meetings. They invite all the world to propose subjects for encouragement; and whatever is deemed deserving attention is referred to a committee, who, after due enquiry and deliberation, make their report to the whole society, where it is approved, rejected, or altered. A list is published every year of the matters for which they propose to give premiums; which are either sums of money, and those sometimes very considerable, or the society's medal in gold or silver, which they consider as the greatest honor they can bestow. All possible care is taken to prevent partiality in the distribution of their premiums, by appointing committees (who when they find occasion call to their assistance the most skilful artists) for the strict examination of the real merit of all matters brought before them.

The chief objects of the attention of this society in the application of their rewards are ingenuity in the arts, useful discoveries and improvements in agriculture, manufactures, mechanics, and chemistry, or the laying-open of any such to the public; and, in general, all such useful inventions, discoveries, or improvements, as may tend to the advantage of trade and commerce.

It is required that the matters for which premiums are offered be delivered in without names, or any intimation to whom they belong; that each particular thing be marked in what manner each claimant thinks fit, such claimant sending with it a paper sealed up, having on the outside a corresponding mark, and on the inside the claimant's name and address. No papers shall

be opened but such as shall gain premiums; all the rest shall be returned unopened, with the matters to which they belong, if enquired after by the marks within two years; after which time, if not demanded, they shall be publicly burnt, unopened, at some meeting of the society. All the premiums of this society are designed for that part of Great Britain called England, Wales, and Berwick upon Tweed. No person shall receive any premium, bounty, or encouragement, from the society for any matter for which he has obtained or proposes to obtain a patent. No member of this society shall be a candidate for, or entitled to receive, any premium, bounty, or reward whatsoever, except the honorary medal.

The respectability of the members who compose it may be seen by perusing the list which accompanies their Transactions. In vol. xii. it occupies no less than forty-three pages. Some idea may be formed of the wealth of this society, by observing that the list of their premiums fills ninety-six pages, and amounts to 250 in number. These consist of gold medals worth from thirty to fifty, and in a few instances to 100 guineas; and silver medals valued at ten guineas.

This society is one of the most important in Great Britain. Much money has been expended by it, and many are the valuable effects of which it has been productive. Among these we reckon not only the discoveries which it has excited, but the institution of other societies on the same principles to which it has given birth; and future ages will consider the founding of this society as one of the most remarkable epochs in the history of the arts.

*The Society at Bath for the encouragement of Agriculture, Arts, Manufactures, and Commerce,* was founded in 1777 by several gentlemen who met at the city of Bath. This scheme met with a very favorable reception both from the wealthy and learned. The wealthy subscribed very liberally, and the learned communicated many important papers. On application to the London and provincial societies, instituted for the like purposes, they very politely offered their assistance. Seven volumes of their Transactions have already been published, containing very valuable experiments and observations, particularly respecting agriculture, which well deserves the attention of all farmers in the kingdom. We have frequently referred to them in the course of this work.

*Society for Working Mines* is an association formed not many years ago on the continent of Europe. This institution arose from the accidental meeting of several mineralogists at Sklene near Schemnitz, in Hungary, who met to examine a new method of amalgamation. Struck with the shackles imposed on mineralogy by monopolizers of new and useful processes, they thought no method so effectual to break them, as forming a society, whose common labors should be directed to fix mining on its surest principles; and whose memoirs, spread over all Europe, might offer to every adventurer the result of the researches of which they are the object. By these means there would be a mass of information collected; the interests of individuals

would be lost in the general interest; and the one would materially assist the other.

The object of the society is physical geography; mineralogy founded on chemistry; the management of ores; subterraneous geometry; the history of mining; foundries, and the processes for the extraction of metals from the ores, either by fusion or amalgamation, in every instance applied to practice. The end of this institution is to collect every thing that can assist the operations of the miner, and to communicate it to the different members, that they may employ it for the public good, in their respective countries. Each member pays annually two ducats (about 18s. 6d.) to the direction every Easter. The society is bound to publish every novelty that shall be communicated to it; to communicate to each member the memoirs, designs, models, productions, and every thing connected with the institution; to answer all the necessary demands made, relating in any respect to mining; and to give its opinion on every plan or project communicated through the medium of an honorary member. The great centre of intelligence is at Zellerfield in Hartz, Brunswick; but the society is not fixed to any one spot; for in every particular state some practical mineralogist is nominated as director. Among these have appeared the names of baron Born, M. Pallas, M. Carpentier, M. Prebra, and M. Henkel. Their office is to propose the members; to take care that the views of the society are followed out; to answer the requests of the members; in case of the death of a director, to choose another; and to determine where the archives and the strong box is to be placed. Most of the eminent mineralogists in Europe have been members of this society. It is erected on the most liberal and extensive plan.

*The Society for the Improvement of Naval Architecture* was founded in 1791. The object of it is to encourage every useful invention and discovery relating to naval architecture, both by honorary and pecuniary rewards. To improve the theory of floating bodies and of the resistance of fluids; to procure draughts and models of different vessels, with calculations of their capacity, centre of gravity, tonnage, &c.; to make observations and experiments, and to point out such as appear best calculated to further their designs; in a word to cultivate whatever may tend to render navigation more safe, salutary, and even pleasant.

This institution owes its existence to the patriotic disposition and extraordinary attention of Mr. Sewell a citizen of London, who has been led to take such particular notice of the state of naval architecture in this country. His attention was the more seriously excited, by finding that it was the opinion of some private ship-builders, who, in a debate on the failure of one of our naval engagements, pronounced that, such would ever be the case, while the construction of our ships of war was not studied as a science, but carried on merely by precedent; that there had not been one improvement in our navy that did not originate with the French, who had naval schools, and seminaries for the study of it; and that our ships were not a match for those of that

nation either singly or in a fleet,' &c. In a short time the society were enabled to offer very considerable premiums for particular improvements in the construction of our shipping, &c., and also to encourage our philosophers, mathematicians, and mechanics, to make satisfactory experiments, tending to ascertain the laws of resistance of water to solids of different forms, in all varieties of circumstances. Their highest reward is £100 or a gold medal. Other premiums of fifty, thirty, and twenty guineas, according to the importance or difficulty of the particular subject or point of investigation, are likewise offered, for different discoveries, inventions, or improvements. The terms of admission into the society are a subscription of two guineas annually, or twenty guineas for life.

The Society of Artists of Great Britain, which consists of directors and fellows, was incorporated by charter in 1765, and empowered to purchase and hold lands, not exceeding £1000 a year. The directors of this society, annually elected, consist of twenty-four persons, including the president, vice-president, treasurer and secretary; and it is required that they be either painters, sculptors, architects, or engravers by profession.

The British Society for extending the Fisheries and Improving the Sea Coasts of this Kingdom, was instituted in 1786. The design of this society will best appear from their charter, of which we subjoin an abstract. The preamble states, 'the great want of improvement in fisheries, agriculture, and manufactures, in the Highlands and Islands of North Britain; the prevalence of emigration from the want of employment in those parts; the prospect of a new nursery of seamen, by the establishment of fishing towns and villages in that quarter.' The act therefore declares that the persons therein named, and all other persons who shall thereafter become proprietors of the joint stock mentioned therein, shall be a distinct and separate body politic and corporate, by the name above quoted. That the said society may raise a capital joint stock not exceeding £150,000 to be applied to purchasing lands and tenements to perpetuity, for the building thereon free towns, villages, and fishing stations; that the joint stock shall be divided into shares of £50 each: that no one person shall in his or her name possess more than ten shares, or £500: That the society shall not borrow money: That the sums to be advanced, and the profits arising therefrom, shall be divided proportionably to the sum subscribed: and that no person shall be liable for a larger sum than he or she shall have respectively subscribed: That one or two shares shall entitle to one vote and no more, in person or by proxy, at all meetings of proprietors; three or four shares to two votes; five, six, or seven shares to three votes; eight or nine shares to four votes; and ten shares to five votes and no more: That more persons than one inclining to hold in their joint names one or more shares shall be entitled to vote, by one of such persons, according to the priority of their names, or by proxy: That bodies corporate shall vote by proxy under their seal: That all persons holding proxies shall be proprietors, and that no person shall hold more than five votes by proxy; that the affairs of the

society shall be managed by a governor, deputy-governor, and thirteen other directors, to be elected annually on the 25th of March, from the proprietors, holding at least one full share, by signed lists of their names to be transmitted to the secretary: That five proprietors, not being governor, director, or other officer, shall be in like manner annually elected to audit the accounts of the society: That there shall be one general meeting of the proprietors annually on the 25th of March: That occasional general meetings shall be called on the request of nine or more proprietors: That the general meetings of the proprietors shall make all bye-laws and constitutions for the government of the society, and for the orderly carrying on of its business: That the cash of the society shall be lodged in the bank of England, bank of Scotland, or the royal bank of Scotland: That no director, proprietor, agent, or officer of the society, shall retain any sum or sums of money in his hands beyond the space of thirty days: That all payments shall be made by draughts on the said banks, under the hands of the governor or deputy-governor, countersigned by the secretary or his deputy, and two or more directors: And that the books in which the accounts of the society shall be kept shall be open to all the proprietors.' The institution of this public spirited society was in a great measure owing to the exertions of the patriotic John Knox; who, in the course of twenty-three years, traversed and explored the Highlands of Scotland no less than sixteen times, and spent several thousand pounds of his own fortune in pursuing his patriotic designs.

The Society of Civil Engineers of London.—This society took its rise from the following circumstances:—Before or about the year 1760 a new era in all the arts and sciences commenced in this country. Every thing which contributes to the comfort, the beauty, and the prosperity of a country, moved forward in improvement, so rapidly and so obviously, as to mark that period with particular distinction. It was about this time that manufactures were extended on a new plan, by the enterprize, the capital, and, above all, by the science of the men of deep knowledge and persevering industry engaged in them. It was seen that it would be better for establishments to be placed in new situations, adapted to the obtaining raw materials, and the labor of patient and retired industry, than to endure the vexations that perpetually occur in corporate towns, and the wages of their extravagant workmen. This produced a new demand, not thought of till that period, in this country,—internal navigation. To make communications from factory to factory, and from warehouses to harbours, as well as to carry raw materials to and from such establishments, became absolutely necessary. Hence arose those works of real utility which have been carried on to a degree of extent and magnitude to which as yet there is no appearance of limitation. The ancient harbours of this island, it may be said, have ever been an example in the history of mankind. The sea-ports were such as nature had formed, and were but little better, notwithstanding some jetties and piers of defence, which had been

made and altered, without knowledge or judgment, at municipal expense. This general situation of things gave rise to a new profession and order of men, denominated 'civil engineers.'

The celebrated Mr. Smeaton first proposed this society for the advancement of the science of civil engineering, and in March 1771 it was established, and the members met on Friday evenings, at the Queen's Head Tavern, Holborn. It did not increase rapidly; for in twenty years the numbers were less than seventy, and of these, there were only about fifteen who were real engineers, employed in public works, or private undertakings of great magnitude. The other members were either amateurs, or ingenious workmen and artificers connected with, and employed in, works of engineering. A register was kept of the names of its members; and a communication of ideas and knowledge, in the particular walks of each member, were, at the same time, the amusement and the business of the meetings. In this manner the society proceeded till 1792, when it ceased to exist, by mutual consent of the principal members. Its dissolution was occasioned by the ill treatment which Mr. Smeaton experienced from one of the members.

In April, 1793, a new society was, however, formed under the denomination of 'The Society of Civil Engineers.' It consisted of three classes:—1. Of ordinary members, to consist of real engineers, actually employed as such in

public or in private service. 2. Honorary members, to consist of men of science and gentlemen of rank and fortune, who had applied themselves to subjects of civil engineering; and who might, for knowledge, have been real engineers, had it not been their good fortune to have it in their power to employ others in this profession; and also of those who are employed in other public service, where such and similar kinds of knowledge are necessary. 3. Honorary members, consisting of various artists, whose professions and employments are necessary, or extremely useful, as well as connected with civil engineering.

*The Geological Society* was instituted in 1811, under a president, four vice-presidents, treasurer, two secretaries, and a foreign secretary.

*The Mineralogical Society* was instituted in 1799; but it is now incorporated with the former.

*The Entomological Society of London*, instituted in 1806, has a president, vice-president, treasurer, and secretary, several fellows, and a printer.

*The Linnaean Society* was founded in 1788, and incorporated in 1802. Its late president was Sir James Edward Smith; it has a council, a treasurer, secretary, and librarian. Its house is in Gerard Street, Soho. It has published upwards of twenty volumes of Transactions.

*The Astronomical Society of London* is a rising society of the metropolis of great promise. It was instituted in 1823, and enrolls many distinguished names.

**SOCIETY ISLANDS.** A group of islands in the Pacific, to which Captain Cook gave the name of Society Islands, consists of six only, viz. Marua, Bolabola, Tubia, Otaha, Ulietea, and Huaheine; but to these we may add Otaheite, Eimeo, Sir Charles Saundes's, Tethuroa, and Miatea. See OTAHEITE, &c.

## PART I.

### GENERAL DESCRIPTION.

This group, as Mr. Pinkerton justly observes, has attracted more attention than any other in Polynesia, and our admiration of Otaheite has excited some degree of ridicule on the continent. The unfortunate La Perouse remarks, in one of his letters, 'I flatter myself you will see with pleasure that in the course of so long a voyage I shall have no occasion to put in at those everlasting Society Islands, about which more has been written than concerning several kingdoms of Europe; and I confess to you that I congratulate myself on having nothing to say about Otaheite and queen Oberea.' But it may be said that this accomplished seaman shows some little jealousy of the English discoverers, and is led to prefer the French group called the Islands of Navigators, which perhaps in size and population exceed the Society Islands. The opportunity of fishing has been assigned as a reason why the inhabitants of all the Polynesian islands fix their abodes near the sea; but where fruits are the staple commodities, and the bread-

fruit the staff of life, as in the Society Islands, the pre-eminent fertility of the level which like a margin embraces certain portions of the island, affording a plane for the rearing of huts and villages, and in this way the means of enjoying the social benefits of a pleasant neighbourhood, a traveller feels to be a much more general motive for the Indian's preference. Besides, the refreshing coolness of shade, fanned by the alternating sea and land breezes, makes these withdrawing vales very grateful retreats during the sunny hours of noon tide, when compared with the barren acclivities of the mountains, which in the morning perhaps are parched by an unclouded sun, and in the afternoon drenched with inclement rains. This sudden vicissitude from heat to cold is very keenly felt by a wayfaring man, as the writer has often experienced, one hour panting with heat, the next shivering with cold, unless haply by timely warning he fore stalls the impending shower and repairs with hasty steps to the sea side. Whence the reader will observe that, passing over the difficulty and sultry toil of ascending and descending steeps, the interior of an island is, from the seemingly attracting influence of the mountains upon the vapory contents of the atmosphere, much more exposed to the inclemency of heavy showers than its sea-girt borders, where their low roofed cottages thatched with dried palm leaves are not so often wetted by rain.

Forster says that the Society Isles are encircled with a reef of coral, the lower hills are

of a red ochreous earth, the higher of a kind of argillaceous rock, with coarse granite or the saxyum of Linnaeus. Black and gray basalt are also found, and it is said crystals of native sulphur.

In order to give the reader some perception of that remarkable change which the civil and religious phenomena have undergone, we will extract a few remarks from that excellent account of the Society Islands collected by the compiler of the missionary voyage, and place them in counterview with some observations made by the writer who visited this group, as well as that of the Sandwich Islands, in 1826, as naturalist to the Blossom.

'The government of Otaheite is monarchica, and hereditary in one of the family; of this two branches subsist, Temarre the son of Oberea, and Oammo.' The government now, during the regency of the present queen, is managed by contending chiefs, since her majesty by acts of plunder, injustice, and swinish debauchery, has rendered her authority despicable. Her son, the heir apparent, was a boy of a hopeful disposition, and nursed in moral and religious knowledge in the school of the missionaries. We are sorry to add that this youth, who raised high expectations of his future worth, has since the departure of the Blossom paid the debt of nature. The palace of the queen, which was visited for the special purpose of seeing the best of the choral amusements, might by comparison deserve the name of dwelling-house, because it was tenanted by human creatures. The floor was formed by nature, and its hardness meliorated by a copious strewment of dirty grass. Upon a wide mat, rolled in elegant disorder, the graced persons of the queen-regent, the queen dowager, the princess, and half a dozen female attendants. To give the reader at a single view an idea of the decorum and decency of this assembly; as the house was not divided into a convenient number of apartments, a sanctuary was formed at one corner of the room, by hanging up a piece of cloth, in order to screen certain impatient lovers from the unbought glances of profaner eyes.

'The famous, or rather infamous, Arreoy Society, consisting of noble persons in general, have also different ranks among themselves, like our freemasons, known by the manner of their tattooing.' This cursed club, which maintained a community of wives and the practice of murdering their offsprings, has, by the assiduous and benevolent exertions of the missionaries, been since abolished. We may frame some idea of the lamentable condition of the softer part of human nature, when we remember that a mother deemed it the duty of maternal kindness to give her female child an early quietus, and thus remove it from the sufferance of that hard bondage which she had from the morning of her days unceasingly groaned under. When we sojourn among the Indians of Polynesia, we are apt in contemplating their lewdness, falsehood, and ingratitude, to be severe in our comments, and to express our disapprobation in terms of zealous indignation; but when we return to England, and are again made to feel the

smart of being overreached by the knavish part of our own countrymen, we begin to correct the harshness of our judgment, and to think that iniquity sometimes goes better clad than in a bare maro or scanty apron of a South Sea islander.

There has been a school established for the exclusive education of the children of missionaries, who were in 1826 between seventy and eighty in number, but didactic institution is unable to root out the connate love of one's native soil, which was the theme of all who commented upon the *Odyssey*, and is strikingly exemplified in that rising generation. An infant, as soon as he has learnt to distinguish one object from another, prefers a native nurse to its mother, and its first attempts at articulation are made in the Tahitian dialect. In youth they generally evince the greatest awkwardness of behaviour, when a European is present, and speak their mother tongue with great hesitation. The writer remembers a girl of about thirteen years of age whom he often saw at a house of a certain friend, who could never be bribed by any kindness to reply to his attentions otherwise than with a smile of extreme satisfaction; this arose from that sort of diffidence we feel in our first attempts to express ourselves in a foreign language before those with whom it is vernacular. A married lady of the mission family with whom he was well acquainted never ventured to return an answer to any question or remark, till one day the conversation of her father and his visitor happening to turn upon the subject of the native dancing, the mention of a pastime so fondly remembered set her tongue at a happy liberty, and she began with great freedom and complacency to descant upon their peculiar qualities till her father who from the love of conversing with a stranger interrupted the strain of description and proceeded to tell the story himself.

Mr. Armitage, a respectable weaver, about five or six years ago set out from England for the Society Islands, with an intention and means of establishing a manufactory of cotton, which grows abundantly there; and after a great deal of patient labor succeeded in erecting a mill, and a house for the reception of his numerous looms, spinning wheels, &c.; but, when the women began to reflect that besides paying the half of their toil in weaving, in return for the materials and its dressing, their husbands would be copartners with them in the enjoyment of the produce, they gave up working; this worthy man complained to the writer that he despaired of ever being able to stir these sotish islanders up either by example or reward to any habits of industry.

That the people have degenerated since the time of Cook is unquestionable, who, wherever we had a fair opportunity of judging, was found to be very correct in his statements; which has arisen from this cause, that the natives, being ambitious of obtaining European articles, have left off making any of their own fashion, and altogether ceased to busy themselves in contriving any artificial curiosity, either for ornament or their own particular amusement.

He who has been accustomed to look at dis-

ant countries through the prospective of drawings and descriptions, will feel himself disappointed on landing at Tahiti, for he will miss the green grassy plot, which is so essential for the ground work of a finished landscape. There is a plain, the scene of the wakes and merriments in the time of Cook, which is now overgrown with a sarmentous or matted grass, (*cynodon dactylon*), but for want of dressing, parched and dried like a field of stubble. Instead of neat built cottages, he will with very few exceptions meet with miserable hovels, which from the nature of their constructions give access to the elements of light and air through a thousand crannies. The missionaries and a few of the chiefs inhabit houses, which at the cost of a great deal of labor are made tolerably commodious, and are plastered and white-washed after the manner of English cottages. The features of the women are agreeable, and sometimes handsome, heightened by a kindling smile of good nature; but they want that softness and clearness of complexion which are the result of a delicate nurture, to bestow that witchery and fascination which story has given them.

Few offerings are generally made in warm climates at the shrines of industry, and still fewer by the dames of Tahiti, whose beauties receive but little aid from the curious labors of the needle and the loom, except on Sundays; when putting on their best apparel and native straw bonnets, they hasten with an air of gaiety in their countenances to the chapels of their religious teachers, where they form a pleasing spectacle to a stranger, and fill the heart of the industrious missionary with a certain sense of joy and satisfaction: he naturally reflects that but for his labors they might never have known the nature of a sabbath, nor of that rest that remaineth for the people of God. His eye pursues them not into the recesses of their homes, to see that piety is often worn as an ornament on a Lord's day, and laid up during the rest of the week, lest it should be soiled by the commerce of the world; nor does he always know that their maiden innocence is but too often like the potter's vessel.

A present made to a chief woman, quickly losing the lustre of newness, is given to the first attendant that begs it of her, who in her turn bestows it upon one of her companions, and thus a jewel or valuable article of dress is soon spoiled by the casualties it meets in these successive transfers, and never lasts to be an old one. And a gentleman who has treasured up a precious ornament for the queen of the Society Islands, will have the mortification to see it the next day, after the gift is accepted adorning the ill-favored person of one of her slatternly attendants. Some might be inclined to ascribe this facility of humor to a native goodness of heart; but I fear it ought rather to be attributed to an habitual nonchalance, which renders them indifferent to matters of greater importance. The Tahitian females love to pray and sing, and seem willing to interpret the words of the apostle literally, when he says, that bodily exercise profiteth nothing. The missionary ladies with whom the writer conversed complained that, not-

withstanding the seeming pliancy of their dispositions, it is impossible to mould them into any habits of domestic economy and becoming deportment, much less impart to them any portion of that spirit which tends to keep unity at home, and to draw blessings down from heaven upon members of a peaceful and well ordered family. However lovely the Tahitian fair ones may have appeared in description, the well-beseeming study of household good is without example among them, and their extreme idleness and want of reflection, which renders them forgetful of benefits, were the constant subjects of lamentation by the missionaries, who from a paternal affection were inclined to cast a veil of kindness over the unsightly parts of their behaviour. They have a small code of written laws, which has in description been made to wear a giant's suit of armour; but is as might be expected for the present swaddled in the bands of infancy. The sanctions are generally fines and hard labor, which in the spirit of Draco's legislation are not accommodated to the nature and degree of the offence, and so enormous as to make the act of wearing a wreath of flowers, because it savours of the old superstition, as heinous in the sight of the Haava, or judge, as theft and robbery.

There was a time, since the commencement of the missionary administration and dynasty, when the man or woman who presumed to variegate the complexion with those curious delineations called tattooing (*tatu*, to grave or etch) had the skin, by the same operation, converted into an indelible blot. It is to be hoped that, when time shall have ripened the minds of the Junior missionaries to the same degree of moderation that is exercised by the venerable elders of that brotherhood, such severities will not only begin to be laid aside, as they are already, but be entirely forgotten. The accounts which have been given of the issues of the missionary labors have been either too highly colored by men who were rapt with the idea of the sudden diffusion of the Gospel, or rated a great deal too low by others whose hearts, being unseasoned by the grace of God, dream that nothing is worthy of pursuit but what either pampers their appetite or fills their purse. The representations which have of late appeared to their disparagement labor under this radical defect, that the reporters were neither competent, from an ignorance of the nature of revelation, nor willing, by making proper researches, to arrive at a fair statement. The intelligent reader, who has observed what a vein of pleasantry runs through some remarks on Bow Island, which appeared some time ago in one of the periodical publications, must be admonished that the fruit of the *pandanus odoratissimus*, which is there said to be about the size of a hazel-nut, is often larger than a walnut; and, after the men have eaten a portion of the mealy pulp surrounding the base of the drupe, it is customary for the women to pound it with a stone in order to come at the kernels of the nuts which are found within it.

We have made this remark to show how well those who censure missionaries are calculated to edify the world by their observations and discoveries.

*Pastimes.*—The dances, so much admired in the visits of captain Cook, have interdicted by the missionaries, not only because many wanton and lascivious attitudes were mixed with those light fantastic trippings, in which a merry heart exhibits its sprightly movement in a child of nature, but also because these amusements formed, as among eastern nations, a part of their religious rites, and therefore had a tendency to awaken pleasing reminiscences of their pagan idolatry. They have, since the period alluded to, been debased into what the poet calls κορδατ, and which the scholiast, in terms exactly to our purpose, describes as a certain kind of ludicrous dance, in which the performer moves his loins in a shameful manner.

As the eagerness for accumulating the information of an eye-witness is apt sometimes to make a traveller willing to gratify the warmth of his curiosity at the expense of decorum, an exhibition of this kind was, with a good deal of pains and bribery, set on foot for the entertainment and instruction of the officers of his majesty's ship Blossom. At a set hour in the evening these gentlemen repaired to a dwelling, which was assigned for their nocturnal diversions, but these sports had scarcely begun when the magistrates and beadles appeared with their swords to enforce obedience and put an end to them; and we must do them the justice to add that the sparkling charms of spirituous liquors, which had won the dancers, had no effect upon these stern officers of government. But the reader's estimation will be somewhat lowered to hear that, on the writer's return to the residence of the British consul, he met the very person who had received the bribes acting as constable of the night; took his sword from him, and, by way of expressing his resentment, made as if he would run him through for his treachery, which the dishonest fellow, confounded with this unlooked-for encounter, bore without attempting to defend himself or escape.

Part of the following portion of Tahitian theogony was communicated to Mr. Collie by Taati, a chief of the district of Papara, who had been educated for the high-priesthood to minister at the Morai in the same province. This sacred pile was reared by Taati's great great grandfather in honor of the god Oru, whom he had introduced, it is said, in the following manner:—This predecessor of Taati's, in lineage and government, was often in a state of warfare with the king and the other chieftains of the island. In a certain engagement, he and his followers being discomfited, he began to grow out of conceit with his former patron, and therefore, directing his course towards the island Ulietea, he made his suit to Oru, a divinity of that place, who, won at last by prayers and sacrifices, consented to accompany Taati's ancestor in his return to Tahiti. Encouraged by the presence of Oru he rallied his scattered followers, who had during his absence taken shelter in the mountains, and, having strengthened his numbers by deserters from his adversary, he set forth to battle, overthrew his enemies, and recovered his hereditary possessions. Timmahero, the tutelar god of Tahiti, was not able to stand before Oru and his

victorious worshippers, who by bribes secretly obtained license to perform religious rites in honor of their new protector. And the king, seeing the success of his enemies, began to offer propitiatory sacrifices to Oru till he obtained leave to go to war under his auspices; when, venturing once more to engage with the fortunate chief of Papara, he was victorious, penetrated as far as the Morai, and there, out of gratitude to his benefactor, he proclaimed Oru god of all the island.

Oru was the son of, and derived his powers from, the supreme god Taroa, the father of light and author of might. He married Heuheu, a goddess of no great note, who came from the island of Bolabola, by whom he had a daughter named Toimutto, a powerful divinity of a martial and sanguinary temper, and could be only won by costly sacrifices at the moment of engaging with an enemy. Tu, the god of kings and nobles, who, when rightly invoked, sent a healing power to the afflicted. Tane, the god of war, sprang from the island of Huahine. Tarai was related to Tu but inferior to him. Taroa, Tane, and Ra, came not into the world by the ordinary course of generation; the two last obtained their power from Oru by each one sending him seven human victims. Orata, a descendant of Taroa, who presided over valleys, and was worshipped by those who frequented these recesses. Ruhatu, derived from the island of Tuahururi, and god of Eimeo. He inhabited a shark, in which he came to Tahiti; a cave below the Morai was consecrated to him, and became the repository of his image. He is represented as the patron of fishermen, who addressed their prayers to him for assistance and loaded his altars with wave-offerings from their draughts in grateful acknowledgments for their success. Puna, god of Matovia. Heu inhabited a sun-fish; he had a morai erected to his honor in Ulietea; but, being offended at some part of the edifice, ran up to it with such fury that he made a large opening in one side, and left it as a lasting mark of his displeasure. Tuma was chiefly invoked by the wounded in battle. Tipa, a god of Tetiro and potentate of suffocation. Titihutahu, god of prohibitions, who forbade the eating of pork, fish, cocoa-nuts, &c.; he is described as the enemy of pleasures, and, like the furies, the author of vengeance. The superstitious labored, by earnest prayers and large offerings, to appease the wrath of this implacable divinity. Mr. Collie represents his image as the rudest piece of sculpture he had met with; so that his fearful worshippers seemed not to have thought it proper to make his semblance beautiful who was to them the mar-plot of all gratification. Oruataihai was the giver of all good things and the author of all the sensual pleasures, and the inventor of music and dancing. He is said to have visited the island in a canoe. Urulaiahai, a deity of a very benign disposition, who not only bestowed many blessings upon mortals, while in this tenement of clay, but kindly conducted the erring ghost to the abodes of light.

They never addressed their prayers to any god without supposing that he was near, by a shechinah, or divine presence, but the form of the mercy-seat was various; a piece of the aito, or ta

manu, surmounted by a portion of the internal bony parts of the skull of some chief, wrapped in a quantity of cloth, and garnished with the tail-feathers of the tropic bird, generally answered this purpose in the morais. When at a distance from these sacred enclosures a suppliant deemed it sufficient to direct his petitions to a piece of stick, adorned with a tuft of red feathers, as the fancied residence of his peculiar god.

The ministry of many priests was assigned to each moral, who had the privilege of choosing an unlimited number of wives. They, like the oriental interpreters of the counsels of fate, lived upon the offerings presented at the altars. When a chief fell sick all the natives of that quarter hastened with their votive offerings to the nearest morai, and, if their means allowed them to afford a pig, they pinched his nose and right ear, that the vengeful deity might be diverted by its plaintive squeals and be inclined to restore health to the afflicted chief.

The account of Taroa, communicated to this gentleman, differs from that given in the Missionary Voyage in making this deity masculine. The missionaries were most probably in the right; for, though the writer's partial information represents the divinity as corresponding to the *ò ior* and *ò Δημονόγος* of ancient philosophers, yet the Tahitian priests, who had given themselves up to the contemplation, might consider the generating cause of all things as possessed of a feminine nature in perfect consonance with the old notion which made its essential attribute to be that of producing, and which they plainly derived from the study of the creative power and energies of the earth exerted in giving existence to the various tribes of the animal and vegetable kingdoms that people its surface.'

#### *Unde alma liquentes*

*Humorum guttas Mater cum Terra recepit,  
Fœta parit nitidas fruges, arbustaque lata;  
Et genus humanum, et parit omnia sæcla ferarum  
Pabula cum præbet, quibus omnes corpora pascunt,  
Et dulcem ducunt vitam, prolemque propagant  
Quapropter merito maternum nomen adeptæ est.*

*Lucret. lib. ii. 991.*

*Tii* was not only the common appellation for their teraphim, penates, or household gods, but was also the name of a particular deity who held the patronage of animated and vegetable nature. *Oino*, his wife, had the government of the moon and stars, especially the former, which, by its waxing and waning, did sympathetically indicate the sickening hours and happy revival of its fair patroness. It is said that *Oino* was wont to ask her husband *Tii* why, as she caused the moon to set only to rise again, he could not, after her example, make his dead cocoa-nut trees sprout forth again. *Tii*, by way of reply, might have pointed out the embryo lodged within the shell and the ample provision of albuminous matter, the transformed milky juice of the nut which had been made for the propagation of the species and the nourishment of the future offspring.

The Pythagorean philosopher, Nicomachus, when speaking of the eight-stringed lyre as an improvement of the more ancient heptachord made by his great master, from observing the most satisfactory consonance, *κατακορεστάτην*

*συμφωνίας*, which the extreme sounds of an octave produced, plainly intimates as he proceeds to treat of the nature of its invention that he considered the diatessaron, or system of four sounds, as anterior in the order of discovery to that of eight. To show how well instructed the great man was in the nature and origin of music, we may allege an obvious proof derived from the practice of the Society Islanders, who, in all the airs which the writer heard, never exceeded the compass of four sounds, and whose melodious voices and perfect intonation lent a peculiar grace and sweetness to the Phrygian mood, which had its half tone between the first and second degrees or strings of the tetrachord. The ear was often delighted with hearing the children sing a short air and accompany each other at the intervals of major and minor thirds. The remaining part of their old instrumental music was confined to reeds, which were tuned as shepherds were wont to tune an oaten pipe; but, when these were played to the dance, two uniformly were made to accompany each other at the intervals above mentioned. This tuning took up some time before the performers were ready to commence playing, and was often repeated during the performance, since from the frail texture of a reed it is subject to accidental variations.

The scepticism which has been shown towards the assertion that the Society Islanders sing in parts is built upon a very silly objection, that because certain writers who would make it appear that the sense of hearing was not gratified in a Greek as it is in a European, assert that it is doubtful whether the ancients had any knowledge of what we call harmony or thorough-base; and hence a fortiori that a traveller, when he tells us that his *ey* was charmed with the concord of sweet sounds in Tahiti, only heard the execrable monotony of consecutive fifths and octaves. Were the writings of the ancients more frequently and more extensively consulted, than they are in this age of discovery, men would find that the ancients, who in point of acuteness far surpassed us, had very clear and precise ideas of classification; not only of abstract truths, but of the various objects of animated and vegetable nature, though they wanted that experience, which from the mass of accumulated particulars we have had the opportunity of gaining by a widely extended research.

The author of the first Tahitian grammar, which was printed in 1823, observes that the 'resemblance' of this dialect of the Polynesian language 'to the Hebrew in the conjugation of the verb, and in many of its primitive words, could easily be shown: many words seem to have truly Hebrew roots, such as mate, death' מות 'mara, or mara-mara bitter,' רפוא 'rapaau, to heal;' פא 'pae side;' נסח, &c.: by similitude in the conjugations the writer alludes to the causative particle *haa*, corresponding in use and power to *ho* of the Hawaiian dialect, as *te matau nei au*, I fear. *Te haa matau nei au*, I make afraid, or cause to fear, so in Hebrew נסח, he was glad; חשב, he rejoiced another; and what the missionary in modesty calls a resemblance, may, without presumption, be affirm-

ed to be a derivation; for, by comparing *ho* and *uu* of kindred dialects together, we gather that the vowel sound is not essential to express causation; but the aspirate *n* which seems to be an onomatopœia for exertion or contentio of Tully. The *O* which has been prefixed to Tahiti (this word in reforming their orthography was overlooked, as it ought, according to the design of following the Italian sounds, to have been written Tahaiti) is merely emphatic, as *n* is sometimes in Hebrew, שָׁרֶן, the earth. The author of the grammar speaks of the precision secured by some of its pronouns, and its being in this respect superior to other languages. This advantage which the writer has often heard illustrated by the American missionaries at Oahu, and felt the importance of in speaking the Hawaiian dialect, consists in having a prounoun *ourou*, ye, excluding myself, and *ratov*, ye, including myself. *Taua*, thou and I; *maua* I and another.

## PART II.

### NATURAL HISTORY OF THESE ISLANDS.

*Marara*, *inocarpus edulis*.—This stately tree, which nature has supported by large buttresses formed out of the trunk, bears a large flattened fibrous nut as its generic name implies, which, after it has undergone the process of roasting, is by its farinaceous properties become a very nutritive and agreeable food. It flourishes in the valleys as well as in the mountains, but in the former situations in the island of Eimeo, the supporters alluded to are very remarkable for their number and magnitude. This effort of nature to enable the tree to stand up against a storm is analogous to that which is observed in the *pandanus odoratissimus*, wherein the trunk does, from time to time, send down auxiliary stems, which, fixing themselves in the soil, serve at the same time as props to the tree, and furnish new sets of tubes for absorbing the elementary moisture of the earth.

*Spondias dulcis*, or *vi*, a handsome tree with a deep green foliage of winged leaves, bearing a juicy fruit, about the size of a golden pippin and of a bright green color. The rind bespeaks the relationship of this genus to the natural order of *terebintaceæ*, embracing such genera as *rhus*, *mangifera*, *pistacia* (*terebinthus* Tournf. and Juss.), &c., by a strong savor of turpentine which it imparts to the tongue, may be kindly meant by nature to act as a corrective for any bad effect that the acid pulp might have upon the eater. It must not, however, be dissembled that the frequent examples of dysentery which occur in these islands are with good reason ascribed to the immoderate eating of this fruit. When the islanders some years ago had learnt the art of distilling from some of their European visitors, they made use principally of this fruit for that purpose, to which the spirituous flavor of the over-ripened fruit seemed plainly to invite them by indicating that it possessed a large proportion of alcohol.

*Angiopteris evecta*.—The nerves or secondary vessels of each leaflet are forked, and bear upon the top of each fork a double series of bival-

vular capsules. This elegant fern, which in Pitcairn's Island rises to the consideration of a handsome tree, grows in the island of Eimeo in the form of a large stump, which is produced by each frond or fern leaf dying in its turn, and bequeathing a certain portion of the stipe and sheath to the parent stock. The indolence of the natives preventing any attention to the culture of the taro, no provision is made against the season in which the bread-fruit fails, which continues only two months in the year: they are obliged to sate their hunger with the roasted interior of this fern, which from the mixture of woody matter contains very little aliment, but it serves to abate the keenness of appetite by replenishing the stomach without nourishing the lapsed powers of health.

*Erythrina*, or red coral tree, adorns the woody dells in many parts of the islands.

The *mamee*, or as it is now written *mami*, is the *ficus tinctoria* of systematic botanists, bearing a small fig which yields the brown dye mentioned in the article *OTAHETE* of this work.

Various species of the *gardenia* grow plentifully, and from their grateful odor and beautiful foliage are often wreathed into chaplets to screen the brows from the scorching power of the sun's rays. The variation in the structure of the berry in this genus, which is highly characteristic in many others, is apt to puzzle a beginner; but the flattened embryo lodged in a horny albumen, a great peculiarity in the natural order *rubiaceæ*, the flexure of the corolla, and the sweetness of its scent will guide his judgment in deciding what plants from their general habit belong to this very natural genus.

*Schizaea, forsteri*, a fern found in the mountains of Eimeo; the frond is at first simple, but afterwards expands by frequent dichotomies into a fern-shaped leaf, like some species of *fucus* or sea-weed. Each final division is surmounted at the tip with a compound spike of seed vessels, ranged in lines upon the rachis.

The woods are ornamented by some of the *melastoma*, which are readily distinguished by the three-nerved leaves and refracted anthers. The large deep blue flowers garnishing the boughs of a wide spreading tree present a very lovely sight to the eye of a contemplative observer.

*Thespesia populnea*, a beautiful tree of the order of *malvaceæ*. Its large yellow blossoms, of that essential form typified in the mallow, and the broad, deep-green, heart-shaped, leaves, make it very easily recognised.

There are several species of *hibiscus*, or *porau*, rising to large and very slighty trees. The timber being soft is unfit for many purposes; but from the size of the ligneous fibres is very elastic, and would be suitable for the construction of several kinds of musical instruments, as it appeared from its use among the inhabitants of Pitcairn, who produce a very pleasing tone from a piece of this wood laid across a couple of battens and struck with a stick.

The *tamamu*, or *calliphyllo inophyllum*.—The leaves of this tree are peculiarly elegant from the parallel arrangement of the secondary veins. The flowers are white and sweet-scented, and

appear in numerous clusters. The wood, for its compactness and density, scarcely inferior to oak; and, from the curious variegations of its grain, is, when wrought into furniture, comparable to most of the ornamental woods brought from abroad.

There is a kind of grass related to the cenchrus, called by the aborigines *pirepire*, which adheres to the clothes of the passenger by means of a ruff or involucle of sharp prickles.

Lucretius was disposed to ascribe the invention of many arts to the teaching of nature; and we may offer two additional testimonies in favor of this opinion by alluding to what has already been said about the fruit of the spondias dulcis. The juices of this and many other kinds of fruits, when deeply concocted by a tropical sun, change their acid to vinous flavor, as the author has often observed; and hence, to a reflecting mind, might have first suggested the idea of distillation, or separating the spirit from the pulp by the action of heat. The grateful relish imparted to some fluids when in a state of fermentation might have been learnt from experiencing that the juice of the cocoa-nut, when agitated by the principle of heat, acquires a certain keenness that makes it very refreshing to a way-worn traveller, who cannot fail to notice how vapid the liquor is at other times in comparison with it when in that state.

The Society Islands have afforded the botanical world several new ferns. Among these cryptogamous productions the trichomanes, from the delicate transparent nature of its foliage, and the elegance of the urn-shaped fructifications, wins the admiration of the most incurious beholder.

The *vittaria*, a grass-like fern, parasitic upon trees; it has the capsules disposed in an uninterrupted line on the margin of the frond. It is distinguished from the pteris, with which it coincides in having linear and marginal series of capsules, by having a double involucre, the one opening towards the edge, the other towards the midrib of the frond. There are found some species of adiantum, presenting the characteristic of having their seed-vessels concealed by a doubling of the margin of the frond. At a certain season of the year the under surface of a species of this fern is powdered with a yellow dust, whence among the people of Chili it has gained the denomination of *doradilla*, or golden fern.

*Clathrus*.—A singularly shaped fungus of this kind was brought to the naturalist while at Tahiti; it had a stipe or stem of spongy texture, while hollow and reflected at the summit into a hemispherical pileus or cap of a brown color, which presented a surface chequered with numerous cells like the reticulum of ruminating animals. From the margin of this cap was suspended a veil of network, which might be looked upon as a prolongation of its external surface. It exhaled a very powerful odor. The veil in question had so much the appearance of the result of art that its natural origin was at first doubted.

*Winawina* is the name by which the *abrus precatorius* is distinguished, known in this country by the seeds being strung into necklaces. The hardness, lovely redness, and black scar or

hilum, of these seeds, which are contained in pods, constitute the chief mark of distinction in this genus. Species of the genera *dodonaea*, *greura*, *daphne metrosideros*, &c. &c., are also found here.

SOCINIANS, in church-history, a sect so called from their founder Faustus Socinus. See SOCINUS. They maintain, 'That Jesus Christ was a mere man, who had no existence before he was conceived by the Virgin Mary; that the Holy Ghost is no distinct person, but that the Father is truly and properly God. They own, that the name of God is given in the Holy Scriptures to Jesus Christ; but contend that it is only a deputed title, which, however, invests him with an absolute sovereignty over all created beings, and renders him an object of worship to men and angels. They deny the doctrines of satisfaction and imputed righteousness; and say that Christ only preached the truth to mankind, set before them in himself as an example of heroic virtue, and sealed his doctrines with his blood. Original sin and absolute predestination they esteem scholastic chimeras. They likewise maintain the sleep of the soul, which they say becomes insensible at death, and is raised again with the body at the resurrection, when the good shall be established in the possession of eternal felicity, while the wicked shall be consigned to a fire that will not torment them eternally, but for a certain duration proportioned to their demerits. This term is often used in mere reproach: the Antitrinitarians or Unitarians, to whom it is more commonly applied, disclaim the name, and every human leader, and profess to be guided solely by the word of God and the deductions of reason. Modern Unitarianism, as taught by Dr. Priestley, is certainly a very different thing from Socinianism, as we find it in the Racovian catechism and other standard works of this sect. This far-famed philosopher has discovered what escaped the sagacity of all the fratres poloni, that Jesus Christ was the son of Joseph as well as Mary; that the evangelists mistook the meaning of Isaiah's prophecy, that 'a virgin should conceive and bear a son'; that the applying of this prophecy to the birth of our Saviour, led them to conclude that his conception was miraculous; and that we are not to wonder at this mistake, as the apostles were not always inspired, and were in general inconclusive reasoners. The modesty of the writer in claiming the merit of such discoveries will appear in its proper colors to all our readers; the truth of his doctrine shall be considered under THEOLOGY. In the mean time we may refer to the article ANTITRINITARIANS, for an impartial survey of the modern arguments in this controversy.

SOCINIOS, an emperor of Abyssinia, who sent an embassy to pope Paul V., and for some time established the Roman Catholic religion in Abyssinia. See ETHIOPIA.

SOCINUS (Lælius), one of the founders of the sect of Socinians, was born at Sienna in Tuscany, in 1525. Being designed by his father for the law, he began very early to search for the foundation of that science in the word of God; and by that study discovered that the Romish religion taught many things contrary to revelation.

when, being desirous of penetrating farther into the true sense of the Scriptures, he studied Greek, Hebrew, and even Arabic. In 1547 he left Italy to converse with the Protestants; and spent four years in travelling through France, England, the Netherlands, Germany, and Poland, and at length settled at Zurich. He thus became acquainted with the most learned men of his time, who testified by their letters the esteem they had for him; but, as he discovered to them his doubts, he was greatly suspected of heresy. He, however, conducted himself with such prudence, that he lived among the capital enemies of his opinions, without receiving any injury, and he met with some disciples, who heard his instructions with respect: these were Italians who left their native country on account of religion, and wandered about in Germany and Poland. He communicated likewise his sentiments to his relations by his writings, which he caused to be conveyed to them at Sienna. He died at Zurich in 1562. Those who were of sentiments opposite to his, and were personally acquainted with him, confess that his outward behaviour was blameless. He wrote a Paraphrase on the first chapter of St. John; and other works are ascribed to him.

SOCINUS (Faustus), nephew of the preceding, and principal founder of the Socinian sect, was born at Sienna in 1539. The letters which his uncle Lælius wrote to his relations, and which infused into them many seeds of heresy, made an impression upon him; so that he fled as well as the rest, when the inquisition began to persecute that family. He was at Lyons when he heard of his uncle's death, and departed immediately to take possession of his writings. He returned to Tuscany, and made himself so agreeable to the grand duke, that the charms which he found in that court, and the honorable posts he filled there, hindered him for twelve years from putting the last hand to the system of divinity of which his uncle Lælius had made a rough draught. At last he went into Germany, in 1574, and paid no regard to the grand duke's advices to return. He staid three years at Basil, and studied divinity there; and, having adopted a set of principles very different from that of Protestants, he resolved to maintain and propagate them; for which purpose he wrote a treatise *De Iesu Christo Servatore*. In 1579 Socinus retired into Poland, and desired to be admitted into the communion of the Unitarians; but, as he differed from them in some points, he met with a repulse. However, he did not cease to write in defence of their churches against those who attacked them. At length his book against James Paleologus furnished his enemies with a pretence to exasperate the king of Poland against him; but, though the mere reading of it was sufficient to refute his accusers, Socinus left Cracow, after having resided there four years. He then lived under the protection of several Polish lords, and married a lady of a good family; but her death, which happened in 1587, so deeply afflicted him as to injure his health; and, to complete his sorrow, he was deprived of his patrimony by the death of Francis de Medicis grand duke of Florence. The consolation he found in seeing his sentiments at last approved by several ministers, was greatly

interrupted in 1598; for he met with a thousand insults at Cracow, and was with great difficulty saved from the hands of the rabble. His house was plundered, and he lost his goods; but this loss was not so uneasy to him as that of some MSS., which he extremely regretted. To deliver himself from such dangers, he retired to a village about nine miles from Cracow, where he spent the remainder of his days at the house of Abraham Blonski, a Polish gentleman, and died there in 1604. The following epitaph was inscribed on his tomb:—

Tota licet Babylon destruxit tecta Lutherus,  
Muros Calvinus, sed fundamenta Socinus:

i. e. Luther destroyed the houses of Babylon, Calvin the walls, but Socinus subverted the foundations. The sentiments of Socinus, with regard to the principal theological subjects controverted among Christians, appear in the following abstract of his writings; and the collection of them, in two volumes, folio, forms part of the *Bibliotheca Fratrum Polonorum*. Socinus maintained that Jesus Christ was a man, conceived and formed in the womb of the Virgin, without the intervention of a man, by the power of the divine Spirit; on this account he was, in a peculiar sense, God's own and only begotten son, as no other person ever was the son of God in the same way, by the immediate origin of his being. Moreover, he was constituted the son of God by his resurrection from the dead, and was then begotten by God, when God raised him from the dead. As to those passages which have been supposed to assert Christ's existence in the heavenly world, previous to his birth and appearance among men, he explains them, by alleging that Christ himself, after he was born, and before he entered on the office assigned him by his Father, was, in consequence of the divine counsel and agency, in heaven, and remained there for some time; that he might hear from God, and being with him, as the Scripture says, might see those things which he was to announce to the world, in the name of God himself; though he explains John iii. 13, as figurative language. In explaining the first words of St. John's gospel, In the beginning was the word, &c., he observes, that the terms, in the beginning, do not relate to eternity, but to the order of those things which John was about to write concerning Jesus Christ; imitating Moses, who, in writing his history, opens his introduction with this word beginning, in reference to the transactions which he was about to record. And Jesus is called the Word, he supposes, not on account of his nature or substance, but because of the office he discharged when he revealed to us the word of the gospel from the Father. The word was with God, i. e. Jesus, as the word of God, before he was pointed out by the preaching of the Baptist, was known to God alone. And the word was God: the term God, says this commentator, does not denote substance, but authority, power, and beneficence, which were derived from the Father, and which entitled Christ, according to the opinion of this writer, to adoration and worship. His ideas of the efficacy of our Lord's death and

mediation are utterly repugnant to those that have been generally entertained by persons called Calvinists. Nothing, he says, can be more incompatible with each other, than a free pardon and satisfaction. He adds no man of judgment and piety ought to entertain the idea of a satisfaction for sin; since it plainly does very much derogate from the power and authority, or goodness and mercy of God; and, though a propitiation be not the same thing as a satisfaction, and though God never refrained from the punishment of sin on account of any real satisfaction given him, yet it is certain that in remitting the punishment of our sins by Jesus Christ no propitiation intervened; but God has, from his free will, exhibited himself so propitious to us in Christ, as not to exact the punishment of our sins, though he might justly have done it. However, he allows not only that the death of Christ, and the pouring out of his blood for us, was an offering and sacrifice to God, but that this sacrifice may be said to have been offered up for our sins in order to their being forgiven; yet he apprehended that this sacrifice, as far as it was expiatory, was offered by Christ, not on the cross, but in heaven itself, after his resurrection. To which purpose he observes that Christ did not obtain eternal redemption for us before he entered into the holy place, and there assumed the priesthood; and without a priesthood no expiatory offering could be made. Socinus does also expressly deny the distinct personality of the Holy Ghost.

Socinus thought that the progenitor of our race was mortal, i. e. liable to death, by reason of his frame, and incapable of exemption, without an exertion of the divine favor and influence, which was not granted to him at creation; and, therefore, when the apostle asserts that by sin death entered into the world, he meant not natural mortality, but the necessity of dying, or eternal death. To this purpose he explains himself: Adam, if he had not sinned, might have been preserved from death by the kindness of God, though naturally mortal; or, if he had died, have been restored to life, and made immortal. By his sin he did, as it were, refuse to give himself and his posterity this blessing; and, therefore, unless the favor of God be renewed to us, we must all die, and remain in the state of the dead. As to the nature of the human soul, it seems to have been the opinion of Socinus, that, after this life, it doth not so subsist of itself, without the body, as to be capable of any reward or punishment, or any sensations at all. To the question, whether the first man had any original righteousness before he sinned? Socinus replies, that if by original righteousness be meant such a condition that he could not sin, this certainly was not the state of Adam, as it is clear he did sin. But if original righteousness consisted in this, that his reason had the absolute rule over his appetites and senses, and invariably directed them, then the opinion of those who ascribe it to Adam is supported by no argument: hence it should seem from Adam's fall that there was no perfect harmony between them; and that his appetites and senses had the dominion over his reason. If it be asked,

says Socinus, whether there is original sin? he answers, this is the same as the enquiry, whether men, when they are born, because they derive their origin from Adam, have, on account of his fall, contracted any guilt or punishment, or are obnoxious to either? Therefore, since the consent of the will must constitute guilt, and there can be no punishment without antecedent guilt, it seems not at all possible that either of these should pertain to a man when he is born, as he neither has, nor could have before, any use of his own will. If by original sin be understood certain innate desires, or evil concupiscence in man, and a proneness to sin, this opinion Socinus denies, and labors to refute; concluding, upon the whole, that there is no such thing as original sin, i. e. a taint or gravity in consequence of the sin of the first man, necessarily produced, or by any means inflicted on the human race; and that no other evil necessarily flows to all his posterity from that first transgression, than by some means or other the necessity of dying; not indeed through the influence of that transgression, but because man, being naturally mortal, was on that account left by God to his own natural mortality, and what was natural became necessary as a punishment on the offender; consequently they who were born of him must be born in the same circumstances, for he was deprived of nothing he naturally had or could have. From reasoning on this subject, Socinus concludes that there is a freedom of will in man, and that the powers of man are not so few and feeble, but that he may, with the assistance of God, obey the divine law by the right use and application of his powers. Divine assistance he considers as external and internal; and the latter, he says, is twofold: the one, when God by some means impresseth on the heart what he has promised to them that obey him; and the other, when he instructs and illuminates the mind rightly to discern his will, in those instances which cannot be expressly contained in his written word: however, this internal assistance belongs only to those who have made good use of the external. The doctrine of predestination Socinus absolutely denies, and he endeavours to account for the pre-existence of the Deity, without admitting that notion of his decrees which some divines have adopted. On the head of justification, Socinus observes that God out of his mere mercy justifies us, i. e. pronounces us righteous, and grants us forgiveness of sins, and eternal life; but he requireth from us, before this be done, that we believe in Christ, i. e. confide in and obey him; and our good works, or the obedience we render to Christ, though not the efficient or meritorious cause, are the sine qua non, or indispensable pre-requisite, of our justification before God, and eternal salvation. But if any should deviate from this obedience, by falling into sin, and continuing therein, they cease to be justified; nevertheless, by repentance and amendment of life, they may be justified again: but this second repentance, he says, is not in our power, God granting an ability for it to whom he pleaseth. Finally, Socinus denied the perpetuity of baptism, as an ordinance, alleging

that it was not prescribed for those who in any other way have publicly given their names to Christ, or from their earliest years have been educated in the Christian discipline; or, if it is to be retained in these days, he apprehends it should be retained principally on account of those who have been converted from other religions to the Christian. He farther thought, that, in order to the right administration of baptism, it is previously necessary that the baptised person should be a believer, and he, therefore, reckoned the practice of infant baptism unscriptural and erroneous. All Faustus Socinus's works are contained in the two first volumes of the *Bibliotheca Fratrum Polonorum*.

SOCINS (Marianus), LL. D., an eminent Italian lawyer, descended from an ancient family which had produced several civilians. He was born at Sienna, in Tuscany, in 1482; and took his degree of L. L. D. in 1503. He taught civil law as professor at Sienna several years; he afterwards went to Padua, and last to Bologna in 1543, where he died in 1556.

SOCK, n. s. Sax. *rocce*; Belg. *socke*; Lat. *soccus*. Something put between the foot and shoe.

Ere I lead this life long, I'll sow nether *socks* and mend them, and foot them too.

*Shakespeare. Henry IV.*

A physician, that would be mystical, prescribeth for the rheum to walk continually upon a camomile alley; meaning he should put camomile within his *socks*.

*Bacon.*

Then to the well-trod stage anon,  
If Jonson's learned *sock* be on,  
Or sweetest Shakespeare, fancy's child,  
Warble his native wood-notes wild. *Milton.*  
Great Fletcher never treads in buskins here,  
Nor greater Jonson dares in *socks* appear;  
But gentle Simpkin just reception finds  
Amidst the monument of vanished minds. *Dryden.*

On two figures of actors in the villa Mathei at Rome we see the fashion of the old *sock* and larva.

*Addison.*

SOC'KET, n. s. Fr. *souchette*. Any hollow pipe; the hollow of a candlestick; hollow of the eye, &c.

Two goodly beacons, set in watches stead,  
Therein gave light, and flamed continually;  
For they of living fire most subtilly  
Were made, and set in silver *sockets* bright.

*Faerie Queene.*

The *sockets* and supporters of flowers are figured; as in the five brethren of the rose, and *sockets* of gilly-flowers.

*Bacon.*

She at your flames would soon take fire,  
And like a candle in the *socket*  
Dissolve. *Hudibras.*

As the weight leans wholly upon the axis, the grating and rubbing of these axes against the *sockets* wherein they are placed, will cause some inaptitude and consistency to that rotation of the cylinder which would otherwise ensue. *Wilkins.*

The nightly virgin sees  
When sparkling lamps their spluttering light ad-  
vance,

And in the *sockets* only bubbles dance. *Dryden.*

The stars amazed ran backward from the sight,  
And, shrunk within their *sockets*, lost their light.

*Id.*

On either side the head produce an ear,  
And sink a *socket* for the shining share.

*Id.*

His eye-balls in their hollow *sockets* sink. *Id.*

Carpenters, for their rougher work, use a stronger sort of chisels, and distinguish them by the name of socketchisels; their shank made with a hollow *socket* at-top, to receive a strong wooden sprig made to fit into the *socket*. *Moxon.*

To nurse up the vital name as long as the matter will last, is not always good husbandry; it is much better to cover it with an extinguisher of honour than let it consume till it burns blue, and lies agonizing within the *socket*, and at length goes out in no perfume. *Collier.*

Gomphosis is the connection of a tooth to its *socket*. *Wiseman.*

SOCKNA, a town in the northern part of Fezzan, Africa, situated on an immense gravel plain, bounded on the south by the Soudeck mountains. It is surrounded by a wall with seven gates, only one of which can admit a loaded camel. The streets are narrow, and the houses built of mud, having no windows, the light being admitted only by doors. The town is surrounded by extensive plantations of fine dates, but there is no food for camels. The population is estimated by captain Lyon at 2000.

SOCONUSCO, a province of Guatimala, North America, bounded on the north by Vera Paz, Chiapa, Guaxaca, and Honduras, on the south by the Pacific, on the east by Nicaragua, and on the west by Guaxaca and the Pacific Ocean. Guatimala or St. Jago de Guatimala is its capital. It is subdivided into the districts, from the north to the south, along the coast of the Pacific, of Soconusco, Suchitepec, Sansonate, St. Salvador, St. Miguel, Tiquesgalpa, and Choluteca or Xeres. It is thirty-five leagues long from north to south, and as many more from east to west. The air is exceedingly hot, and the general state of the climate either rainy or sultry. The soil is not so fertile in corn as some other parts of Guatimala; but, to compensate this, it produces pimento, indigo, and cacao, in great quantities.

Soconusco, the capital of the above province, is situated on a small river which runs into the Pacific Ocean, long.  $120^{\circ} 40'$  W., lat.  $18^{\circ} 30'$  N. 460 miles south-east of Mexico.

SOCORRO, the largest of the Revillagigedo islands in the north Pacific Ocean, about 200 miles from the west coast of Mexico. It is uninhabited and barren, about fifteen or twenty miles broad, and as many long, and about 3657 feet above the level of the sea. Long.  $110^{\circ} 9'$  W., lat.  $18^{\circ} 48'$  N. It was visited in 1793 by captain Collnett.

SOCOTARA, an island of the Indian Ocean, about forty leagues to the eastward of cape Guardafui, twenty-seven leagues long and seven broad. It is high and mountainous, with a bold shore, which affords, however, excellent harbours. It has been purchased by Great Britain for a packet station. The chief commodity for which the island is resorted to is aloes. Dragon's blood may also be met with in small quantity; and bullocks, goats, fish, and dates, are to be procured reasonably.

SOCRATES, the greatest and wisest, perhaps, of the ancient philosophers, was born at Alopece, a village near Athens, in the fourth year of the seventy-seventh olympiad. His parents were of low rank; his father Sophroniscus being

a statuary, and his mother Phænarete a midwife. Sophroniscus brought up his son, contrary to his inclination, in his own manual employment; in which Socrates, though his mind was continually aspiring after higher objects, was not unsuccessful; for he formed statues of the Graces, which were allowed a place in the citadel of Athens. Upon the death of his father he was left in such straitened circumstances as laid him under the necessity of exercising that art to procure the means of subsistence, though he devoted, at the same time, all the leisure which he could command to the study of philosophy. His distress, however, was soon relieved by Crito, a wealthy Athenian; who, remarking his strong propensity to study, and admiring his ingenuous disposition and distinguished abilities, generously took him under his patronage, and entrusted him with the instruction of his children. The opportunities which Socrates thus enjoyed of attending the public lectures of the most eminent philosophers, so far increased his thirst after wisdom that he determined to relinquish his occupation, and every prospect of emolument which that might afford, to devote himself entirely to his favorite pursuits. Under Anaxagoras and Archelaus he prosecuted the study of nature in the usual manner of the philosophers of the age, and became well acquainted with their doctrines. Prodicus the sophist was his preceptor in eloquence, Evenus in poetry, Theodorus in geometry, and Damo in music. Aspasia, a woman no less celebrated for her intellectual than her personal accomplishments, whose house was frequented by the most celebrated characters, had also some share in the education of Socrates. Under such preceptors he became master of every kind of learning which the age could afford; and, being blessed with very uncommon talents, he appeared under the respectable characters of a good citizen and a true philosopher. Being called upon by his country to take arms, in the long and severe struggle between Athens and Sparta, he signalised himself at the siege of Potidæa, both by his valor and by the hardiness with which he endured fatigue. During the severity of a Thracian winter, whilst others were clad in furs, he wore only his usual clothing, and walked barefoot upon the ice. In an engagement in which he saw Alcibiades falling down wounded, he advanced to defend him, and saved both him and his arms; and, though the prize of valor was on this occasion unquestionably due to Socrates, he generously gave his vote that it might be bestowed upon Alcibiades, to encourage his rising merit. He served in other campaigns with distinguished bravery, and on one occasion saved the life of Xenophon by bearing him, when covered with wounds, out of the reach of the enemy. It was not till Socrates was upwards of sixty years of age that he undertook to serve his country in any civil office, when he was chosen to represent his own district, in the senate of 500. In this office, though he at first exposed himself to some ridicule from the want of experience in the forms of business, he soon convinced his colleagues that he was superior to them all in wisdom and integrity. Whilst they, intimidated by the clamors of the populace,

passed an unjust sentence of condemnation upon the commanders who, after the engagement at the Arginusian Islands, had been prevented by a storm from paying funeral honors to the dead, Socrates stood forth singly in their defence, and to the last refused to give his suffrage against them, declaring that no force should compel him to act contrary to justice and the laws. Under the subsequent tyranny he never ceased to condemn the oppressive and cruel proceedings of the thirty tyrants; and when his boldness provoked their resentment, so that his life was in hazard, fearing neither treachery nor violence, he still continued to support, with undaunted firmness, the rights of his fellow-citizens. Having given these proofs of public virtue, both in a military and civil capacity, he wished to do still more for his country. Observing with regret how much the opinions of the Athenian youth were misled, and their principles and taste corrupted by philosophers, who spent all their time in refined speculations upon nature and the origin of things, and by sophists who taught in their schools the arts of false eloquence and deceitful reasoning; Socrates formed the wise and generous design of instituting a new and more useful method of instruction. He justly conceived the true end of philosophy to be, not to make an ostentatious display of superior learning and ability in subtle disputation or ingenious conjectures, but to free mankind from the dominion of pernicious prejudices; to correct their vices; to inspire them with the love of virtue; and thus conduct them in the path of wisdom to true felicity. He therefore assumed the character of a moral philosopher; and, looking upon the whole city of Athens as his school, and all who were disposed to lend him their attention as his pupils, he seized every occasion of communicating moral wisdom to his fellow-citizens. He passed the greater part of his time in public; and the method of instruction of which he chiefly made use was to propose a series of questions to the person with whom he conversed to lead him to some unforeseen conclusion. He first gained the consent of his respondent to some obvious truths, and then obliged him to admit others from their relation or resemblance to those to which he had already assented. Without making use of any direct argument, or persuasion, he chose to lead the person he meant to instruct, to deduce the truths of which he wished to convince him, as a necessary consequence from his own concessions. He commonly conducted these conferences with such address as to conceal his design till the respondent had advanced too far to recede. On some occasions he made use of ironical language, that vain men might be caught in their own replies and be obliged to confess their ignorance. He never assumed the air of a morose and rigid preceptor, but communicated useful instruction with all the ease and pleasantness of polite conversation. Though eminently furnished with every kind of learning, he preferred moral to speculative wisdom. Convinced that philosophy is valuable, not as it furnishes questions for the schools, but as it provides men with a law of life, he censured his predecessors for spending all their time in abstruse researches.

anto nature, and taking no pains to render themselves useful to mankind. His favorite maxim was, ‘ Whatever is above us doth not concern us.’ He estimated the value of knowledge by its utility, and recommended the study of geometry, astronomy, and other sciences, only so far as they admit of a practical application to the purposes of human life. His great object was to lead men into an acquaintance with themselves, to convince them of their follies and vices, to inspire them with the love of virtue, and to furnish them with useful moral instructions. Through his whole life this good man discovered a mind superior to the attractions of wealth and power. Contrary to the general practice of the preceptors of his time, he instructed his pupils without receiving from them any gratuity. He frequently refused rich presents, which were offered him by Alcibiades and others, though importunately urged to accept them by his wife. The chief men of Athens were his stewards: they sent him in provisions, as they apprehended he wanted them; he took what his present wants required and returned the rest. Observing the numerous articles of luxury which were exposed to sale in Athens, he exclaimed, ‘ How many things are there which I do not want!’ With Socrates moderation supplied the place of wealth. In his clothing and food he consulted only the demands of nature. He commonly appeared in a neat but plain cloak, with his feet uncovered. Though his table was only supplied with simple fare he did not scruple to invite men of superior rank to partake of his meals; and when his wife, upon some such occasion, expressed her dissatisfaction on being no better provided, he desired her to give herself no concern: for if his guests were wise men they would be contented with whatever they found at his table; if otherwise, they were unworthy of notice. Though Socrates was exceedingly unfortunate in his domestic connexion, he converted this infelicity into an occasion of exercising his virtues. Xantippe, concerning whose ill humor ancient writers relate many amusing tales, was certainly a woman of a high and unmanageable spirit. But Socrates, while he endeavoured to curb the violence of her temper, improved his own. When Alcibiades expressed his surprise that his friend could bear to live in the same house with so perverse and quarrelsome a companion, Socrates replied that, being daily inured to ill humor at home, he was the better prepared to encounter perverseness and injury abroad. In the midst of domestic vexations and public disorders Socrates retained such an unruffled serenity, that he was never seen either to leave his own house or to return home with a disturbed countenance. In acquiring this entire dominion over his passions and appetites he had the greater merit, as it was not effected without a violent struggle against his natural propensities. Zopyrus, an eminent physiognomist, declared that he discovered in the features of the philosopher evident traces of many vicious inclinations. The friends of Socrates who were present ridiculed his ignorance; but Socrates acknowledged his penetration, and confessed that he was in his natural disposition prone to vice, but that he had subdued his inclinations by reason and philoso-

phy. Through the whole of his life Socrates gave himself up to the guidance of unbiased reason, which is supposed by some to be all that he meant by the genius or *dæmon* from whom he professed to receive instruction. But this opinion is inconsistent with the accounts given by his followers of that *dæmon*, and even with the language in which he spoke of it himself. Plato sometimes calls it his guardian, and Apuleius his god; and, as Xenophon attests that it was the belief of his master that the gods occasionally communicate to men the knowledge of future events, it is probable that Socrates admitted, with the generality of his countrymen, the existence of those intermediate beings called *dæmons*, of one of which he might fancy himself the peculiar care. (See *DÆMON*.) Convinced of the weakness of the human understanding, and perceiving that the pride of philosophy had led his predecessors into futile speculations on the nature and origin of things, he judged it most consistent with true wisdom to speak with caution and reverence concerning the divine nature. The wisdom and the virtues of this great man, whilst they procured him many followers, created him also many enemies. The sophists (see *SOPHISTS*), whose knavery and ignorance he took every opportunity of exposing to public contempt, became inveterate in their enmity against so bold a reformer, and devised an expedient by which they hoped to check the current of his popularity. They engaged Aristophanes, the first buffoon of the age, to write a comedy in which Socrates should be the principal character. Aristophanes, pleased with so promising an occasion of displaying his low and malignant wit, undertook the task, and produced the comedy of the *Clouds*, still extant in his works. In this piece Socrates is introduced hanging in a basket in the air, and thence pouring forth absurdity and prophaneness. But the philosopher showing, in a crowded theatre, that he was wholly unmoved by this ribaldry, the satire failed of its effect; and when Aristophanes attempted the year following to renew the piece, with alterations and additions, the representation was so much disengaged that he was obliged to discontinue it. From this time Socrates continued for many years to pursue without interruption his laudable design of instructing and reforming his fellow-citizens. At length, however, when the inflexible integrity with which he had discharged the duty of a senator, and the firmness with which he had opposed every kind of political corruption and oppression, had greatly increased the number of his enemies, clandestine arts were employed to raise a general prejudice against him. The people were industriously reminded that Critias, who had been one of the most cruel of the thirty tyrants, and Alcibiades, who had insulted religion, by defacing the public statues of Mercury, and performing a mock representation of the Eleusinian mysteries, had in their youth been disciples of Socrates; and, the minds of the populace being thus prepared, a direct accusation was preferred against him before the supreme court of judicature. His accusers were Anytus a leather-dresser, who had long entertained a personal enmity against Socrates, for reprehend-

ing his avarice, in depriving his sons of the benefits of learning, that they might pursue the gains of trade; Melitus, a young rhetorician, who was capable of undertaking any thing for the sake of gain; and Lycon, who was glad of any opportunity of displaying his talents. The accusation, which was delivered to the senate under the name of Melitus, was this: ‘Melitus, son of Melitus, of the tribe of Pythos, accuseth Socrates, son of Sophroniscus, of the tribe of Alopece. Socrates violates the laws, in not acknowledging the gods which the state acknowledges, and by introducing new divinities. He also violates the laws by corrupting the youth. Be his punishment DEATH.’ This charge was delivered upon oath to the senate; and Crito, a friend of Socrates, became surety for his appearance on the day of his trial. Anytus soon afterwards sent a private message to Socrates, assuring him, that if he would desist from censuring his conduct, he would withdraw his accusation. But Socrates refused to comply with so degrading a condition; and with his usual spirit replied, ‘Whilst I live I will never disguise the truth, nor speak otherwise than my duty requires.’ The interval between the accusation and the trial he spent in philosophical conversations with his friends, choosing to discourse upon any other subject rather than his own situation. When the day of trial arrived, his accusers appeared in the senate, and attempted to support their charge in three distinct speeches, which strongly marked their respective characters. Plato, who was a young man, and a zealous follower of Socrates, then rose up to address the judges in defence of his master; but, whilst he was attempting to apologize for his youth, he was abruptly commanded by the court to sit down. Socrates, however, needed no advocate. Ascending the chair with all the serenity of conscious innocence, and with all the dignity of superior merit, he delivered, in a firm and manly tone, an unpremeditated defence of himself, which silenced his opponents, and ought to have convinced his judges. After tracing the progress of the conspiracy which had been raised against him to its true source, the jealousy and resentment of men whose ignorance he had exposed, and whose vices he had ridiculed and reprobated, he distinctly replied to the several charges brought against him by Melitus. To prove that he had not been guilty of impiety towards the gods of his country, he appealed to his frequent practice of attending the public religious festivals. The crime of introducing new divinities, with which he was charged, chiefly, as it seems, on the ground of the admonitions which he professed to have received from an invisible power, he disclaimed, by pleading that it was no new thing for men to consult the gods and receive instructions from them. To refute the charge of his having been a corrupter of youth, he urged the example which he had uniformly exhibited of justice, moderation, and temperance; the moral spirit and tendency of his discourses; and the effect which had actually been produced by his doctrine upon the manners of the young. Then, disdaining to solicit the mercy of his judges, he called upon them for that justice which their

office and their oath obliged them to administer; and, professing his faith and confidence in God, resigned himself to their pleasure. The judges, whose prejudices would not suffer them to pay due attention to this apology, or to examine with impartiality the merits of the cause, immediately declared him guilty of the crimes of which he stood accused. Socrates, in this stage of the trial, had a right to enter his plea against the punishment which the accusers demanded, and, instead of the sentence of death, to propose some pecuniary amercement. But he at first peremptorily refused to make any proposal of this kind, imagining that it might be construed into an acknowledgment of guilt; and asserted that his conduct merited from the state reward rather than punishment. At length, however, he was prevailed upon by his friends to offer upon their credit a fine of thirty minæ. The judges, notwithstanding, still remained inexorable; they proceeded, without farther delay, to pronounce sentence upon him; and he was condemned to be put to death by the poison of hemlock. The sentence being passed, he was sent to prison; which, says Seneca, he entered with the same resolution and firmness with which he had opposed the thirty tyrants: and took away all ignominy from the place. He lay in fetters thirty days; and was constantly visited by Crito, Plato, and other friends, with whom he passed the time in dispute, after his usual manner. Anxious to save so valuable a life, they urged him to attempt his escape, or at least to permit them to convey him away; and Crito went so far as to assure him that, by his interest with the jailor, it might be easily accomplished, and to offer him a retreat in Thessaly; but Socrates rejected the proposal, as a criminal violation of the laws, and asked them whether there was any place out of Attica which death could not reach? At length the day arrived, when the officers to whose care he was committed delivered to Socrates, early in the morning, the final order for his execution, and immediately, according to the law, set him at liberty from his bonds. His friends, who came thus early to the prison that they might have an opportunity of conversing with their master through the day, found his wife sitting by him with a child in her arms. Socrates, that the tranquillity of his last moments might not be disturbed by her unavailing lamentations, requested that she might be conducted home. With the most frantic expressions of grief she left the prison. An interesting conversation then passed between Socrates and his friends, which chiefly turned upon the immortality of the soul. In the course of this conversation, he expressed his disapprobation of the practice of suicide, and assured his friends that his chief support in his present situation was an expectation, though not unmixed with doubts, of a happy existence after death. ‘It would be inexcusable in me,’ said he, ‘to despise death, if I were not persuaded that it will conduct me into the presence of the gods, who are the most righteous governors, and into the society of just and good men; but I derive confidence from the hope that something of man remains after death, and that the condition of good men will

then be much better than that of the bad.' Crito afterwards asking him, in what manner he wished to be buried? Socrates replied, with a smile, 'as you please, provided I do not escape out of your hands.' Then, turning to the rest of his friends, he said, 'is it not strange, after all that I have said to convince you that I am going to the society of the happy, that Crito still thinks that this body, which will soon be a lifeless corpse, is Socrates? Let him dispose of my body as he pleases, but let him not at its interment mourn over it as if it were Socrates.' Towards the close of the day he retired into an adjoining apartment to bathe; his children, in the mean time, expressing to one another their grief at the prospect of losing so excellent a father, and being left to pass the rest of their days in the solitary state of orphans. After a short interval, during which he gave some necessary instructions to his domestics, and took his last leave of his children, the attendant of the prison informed him that the time of drinking the poison was come. The executioner, though accustomed to such scenes, shed tears as he presented the fatal cup. Socrates received it without change of countenance, or the least appearance of perturbation: then, offering up a prayer to the gods that they would grant him a prosperous passage into the invisible world, with perfect composure he swallowed the poisonous draught. His friends around him burst into tears. Socrates alone remained unmoved. He blamed their pusillanimity, and entreated them to exercise a manly constancy worthy of the friends of virtue. He continued walking till the chilling operation of the hemlock obliged him to lie down upon his bed. After remaining for a short time silent, he requested Crito (probably to refute a calumny which might prove injurious to his friends after his decease) not to neglect the offering of a cock which he had vowed to Æsculapius: then, covering himself with his cloak, he expired. Such was the fate of the virtuous Socrates! A story, says Cicero, which I never read without tears. The friends and disciples of this illustrious teacher of wisdom were deeply afflicted by his death, and attended his funeral with every expression of grief. Apprehensive, however, for their own safety, they soon afterwards privately withdrew from the city, and took up their residence in distant places. Several of them visited the philosopher Euclid of Megara, by whom they were kindly received. No sooner was the unjust condemnation of Socrates known through Greece, than a general indignation was kindled in the minds of good men, who universally regretted that so distinguished an advocate for virtue should have fallen a sacrifice to jealousy and envy. The Athenians themselves, so remarkable for their caprice, who never knew the value of their great men till after their death, soon became sensible of the folly as well as criminality of putting to death the man who had been the chief ornament of their city and of the age, and turned their indignation against his accusers. Melitus was condemned to death; and Anytus, to escape a similar fate, went into voluntary exile. To give a farther proof of the sincerity of their regret, the Athenians for a while interrupted public

business; decreed a general mourning; recalled the exiled friends of Socrates; and erected a statue to his memory in one of the most frequented parts of the city. His death happened in the first year of the ninety-sixth Olympiad, and in the seventieth year of his age. Socrates left behind him nothing in writing; at least nothing that has reached us, though he wrote a great deal; but his illustrious pupils Xenophon and Plato have in some measure supplied this defect. The Memoirs of Socrates, written by Xenophon, afford, however, a much more accurate idea of the opinions of Socrates, and of his manner of teaching, than the Dialogues of Plato, who every where mixes his own conceptions and diction with the ideas and language of his master. It is related that, when Socrates heard Plato recite his Lysis, he said, 'how much does this young man make me say which I never conceived!' His distinguishing character was that of a moral philosopher; and his doctrine concerning God and religion was rather practical than speculative. But he did not neglect to build the structure of religious faith upon the firm foundation of an appeal to natural appearances. He taught that the Supreme Being, though invisible, is clearly seen in his works; which at once demonstrate his existence and his wise and benevolent providence. He admitted, besides the one Supreme Deity, the existence of beings who possess a middle station between God and man, to whose immediate agency he ascribed the ordinary phenomena of nature, and whom he supposed to be particularly concerned in the management of human affairs. Hence he declared it to be the duty of every one, in the performance of religious rites, to follow the customs of his country. At the same time, he taught that the merit of all religious offerings depends upon the character of the worshipper, and that the gods take pleasure in the sacrifices of none but the truly pious. Concerning the human soul, the opinion of Socrates, according to Xenophon, was, that it is allied to the Divine Being, not by a participation of essence, but by a similarity of nature; that man excels all other animals in the faculty of reason; and that the existence of good men will be continued after death in a state in which they will receive the reward of their virtue. Although it appears that on this latter topic he was not wholly free from uncertainty, the consolation which he professed to derive from this source in the immediate prospect of death leaves little room to doubt that he entertained a real expectation of immortality: and there is reason to believe that he was the only philosopher of ancient Greece whose principles admitted of such an expectation. Of his moral system, which was in a high degree pure, and founded on the surest basis, the reader will find a short view in our article MORAL PHILOSOPHY.

SOCrates, an ecclesiastical historian of the fifth century, born at Constantinople in the beginning of the reign of Theodosius. He professed the law, and pleaded at the bar, whence he obtained the name of Scholasticus. He wrote an ecclesiastical history, from the year 309, where Eusebius ended, down to 440; and

wrote with great exactness and judgment. An edition of Eusebius and Socrates, in Greek and Latin, with notes by Reading, was published at London in 1720.

**SOCRATIC** (from Socrates) of, or belonging to, or in the manner of Socrates : as,

**SOCRATIC REASONING**, reasoning by questions which the respondent cannot but answer in the affirmative, and thus admit the consequences.

**SOD**, *n. s.* Belg. *sod*. A turf; clod.

The sexton shall green *sod* on thee bestow ;  
Alas ! the sexton is thy banker now. *Swift.*

Here fame shall dress a sweeter *sod*  
Than fancy's feet have ever trod. *Collins.*

**SOD**. The preterite of seethe.  
Jacob *sod* pottage. *Gen. xxv. 29.*

Can *sodden* water, their barley broth,  
Decoct their cold blood to such valiant heat ? *Shakespeare.*

*Sodden* business ! there's a stewed phrase indeed ! *Id.*

Thou *sodden*-witted lord, thou hast no more brain  
than I have in my elbows. *Id.*

*Id. Troilus and Cressida.*

Never caldron *sod*  
With so much fervour, fed with all the store  
That could enrage it. *Chapman.*

Try it with milk *sodden*, and with cream. *Bacon.*  
Mix it with *sodden* wines and raisins. *Dryden.*

**SODA**, in chemistry, the mineral alkali of the old system, because under the name of natron it is found native in mineral seams or crusts. The impure commercial substance called barilla is the incinerated salsola soda. Kelp, the incinerated sea-weed, is a still coarser article, containing seldom above from two to five per cent. of real soda, while barilla occasionally contains twenty per cent. The crystallised carbonate of soda of commerce is procured from the decomposition of sulphate of soda, or muriate of soda. The former is effected by calcination with charcoal and chalk in a reverberatory furnace; the latter is accomplished by the addition of carbonate of potash. To procure pure soda we must boil a solution of the pure carbonate with half its weight of quicklime, and after subsidence decant the clear ley, and evaporate in a clean iron or silver vessel till the liquid flows quietly like oil. It must then be poured out on a polished iron plate. It concretes into a hard white cake, which is to be immediately broken in pieces, and put up, while still hot, in a phial, which must be well corked. If the carbonate of soda be somewhat impure, then, after the action of lime, and subsequent concentration of the ley, alcohol must be digested on it, which will dissolve only the caustic pure soda, and leave the heterogeneous salts. By distilling of the alcohol in a silver alembic the alkali may then be obtained pure. This white solid substance is, however, not absolute soda, but a hydrate, consisting of about 100 soda + 28 water; or of nearly 77 + 23, in 100. If a piece of this soda be exposed to the air it softens and becomes pasty; but it never deliquesces into an oily-looking liquid as potash does. The soda in fact soon becomes drier, because, by absorption of carbonic acid from the air, it passes into an efflorescent carbonate. Soda is distinguishable from potash by sulphuric acid, which forms a very soluble salt with the former,

and a sparingly soluble one with the latter; by muriate of platina and tartaric acid, which occasion precipitates with potash salts, but not with those of soda.

The basis of soda is a peculiar metal called sodium, discovered by Sir H. Davy in 1807, a few days after he discovered potassium. It may be procured in exactly the same manner as potassium, by electrical or chemical decomposition of the pure hydrate. A rather higher degree of heat, and greater voltaic power, are required to decompose soda than potash. Sodium resembles potassium in many of its characters. It is as white as silver, possesses great lustre, and is a good conductor of electricity. It enters into fusion at about 200° Fahrenheit, and rises in vapor at a strong red heat. Its specific gravity is, according to MM. Gay Lussac and Thenard, 0.972, at the temperature of 59° Fahrenheit. In the cold it exercises scarcely any action on dry air or oxygen. But when heated strongly in oxygen or chlorine it burns with great brilliancy. When thrown upon water it effervesces violently, but does not inflame, swims on the surface, gradually diminishes with great agitation, and renders the water a solution of soda. It acts upon most substances in a manner similar to potassium, but with less energy. It tarnishes in the air, but more slowly; and, like potassium, it is best preserved under naphtha. Sodium forms two distinct combinations with oxygen; one is pure soda, whose hydrate is above described; the other is the orange oxide of sodium, observed, like the preceding oxide, first by Sir H. Davy in 1807, but of which the true nature was pointed out, in 1810, by MM. Gay Lussac and Thenard.

Pure soda may be formed by burning sodium in a quantity of air, containing no more oxygen than is sufficient for its conversion into this alkali; i. e. the metal must be in excess: a strong degree of heat must be employed. Pure soda is of a gray color, it is a non-conductor of electricity, of a vitreous fracture, and requires a strong red heat for its fusion. When a little water is added to it there is a violent action between the two bodies; the soda becomes white, crystalline in its appearance, and much more fusible and volatile. It is then the substance commonly called pure or caustic soda; but properly styled the hydrate.

The other oxide or peroxide of sodium may be formed by burning sodium in oxygen in excess. It is of a deep orange color, very fusible, and a non-conductor of electricity. When acted on by water it gives off oxygen, and the water becomes a solution of soda. It deflagrates when strongly heated with combustible bodies.

The proportions of oxygen in soda, and in the orange peroxide of sodium, are easily learned by the action of sodium on water and on oxygen. If a given weight of sodium, in a little glass tube, be thrown by means of the finger under a graduated inverted jar filled with water, the quantity of hydrogen evolved will indicate the quantity of oxygen combined with the metal to form soda; and when sodium is slowly burned in a tray of platina (lined with dry common salt), in oxygen in great excess, from the quantity of oxygen absorbed the composition of the peroxide may be

**learned.** From Sir H. Davy's experiments compared with those of MM. Gay Lussac and Thenard, it appears that the prime equivalent of sodium is 3·0, and that of dry soda, or protoxide of sodium, 4·0; while the orange oxide or deutoxide is 5·0. The numbers given by M. Thenard are, for the first 100 metal + 33·995 oxygen; and for the second, 100 metal + 67·990 oxygen. Another oxide is described containing less oxygen than soda; it is therefore a suboxide. When sodium is kept for some time in a small quantity of moist air, or when sodium in excess is heated with hydrate of soda, a dark grayish substance is formed, more inflammable than sodium, and which affords hydrogen by its action upon water.

Only one combination of sodium and chlorine is known. This is the important substance common salt. It may be formed directly by combustion, or by decomposing any compound of chlorine by sodium. Its properties are well known, and are already described under Acid (MURIATIC). It is a non-conductor of electricity, is fusible at a strong red heat, is volatile at a white heat, and crystallises in cubes. Sodium has a much stronger attraction for chlorine than for oxygen; and soda, or its hydrate, is decomposed by chlorine, oxygen being expelled from the first, and oxygen and water from the second. Potassium has a stronger attraction for chlorine than sodium has; and one mode of procuring sodium easily is by heating together to redness common salt and potassium. This chloride of sodium, improperly called the muriate, consists of 4·5 chlorine + 3·0 sodium. There is no known action between sodium and hydrogen or azote.

Sodium combines readily with sulphur and with phosphorus, presenting similar phenomena to those presented by potassium. The sulphurets and phosphurets of sodium agree in their general properties with those of potassium, except that they are rather less inflammable. They form, by burning, acidulous compounds of sulphuric and phosphoric acid and soda.

Potassium and sodium combine with great facility, and form peculiar compounds, which differ in their properties according to the proportions of the constituents. By a small quantity of sodium potassium is rendered fluid at common temperatures, and its specific gravity is considerably diminished. Eight parts of potassium and one of sodium form a compound that swims in naphtha, and that is fluid at the common temperature of the air. Three parts of sodium and one of potassium make a compound fluid at common temperatures. A little potassium destroys the ductility of sodium, and renders it very brittle and soft. Since the prime of potassium is to that of sodium as 5 to 3, it will require the former quantity of potassium to eliminate the latter quantity of sodium from the chloride. The attractions of potassium, for all substances that have been examined, are stronger than those of sodium. Soda is the basis of common salt, of plate and crown glass, and of all hard soaps.

**SODALITE.** Color green. Massive and crystallised in rhomboidal dodecahedrons, and shining. Cleavage double. Fracture small conchoidal. Translucent. As hard as felspar. Brittle.

**Specific gravity 2·378.** It is infusible; becoming only dark gray before the blowpipe. Its constituents are, silica 38·5 or 36, alumina 27·48 or 32, lime 2·7 or 0, oxide of iron 1 or 0·25, soda 25·5 or 25, muriatic acid 3 or 6·75; volatile matter 2·10 or 0, loss 1·7 or 0.—Thomson and Ekeberg. It was discovered in West Greenland by Sir Charles Gieseke, in a bed in mica slate.

**SODALITY, n. s.** Lat. *sodalitus*. A fellowship; a fraternity.

A new confraternity was instituted in Spain, of the slaves of the blessed Virgin, and this *sodality* established with large indulgencies. *Stillingfleet.*

**SOD'YER, v. a. & n. s.** Fr. *souder*; Dut. *souderen*. It is generally written solder, from Ital. *soldare*; Lat. *solidare*. To cement with some metallic matter: a metallic cement.

He that smootheth with the hammer encourageth him that smote the anvil, saying, It is ready for *sodering*. *Isaiah xli.*

Still the difficulty returns, how these hooks were made: what is it that fastens this *solder*, and links these first principles of bodies into a chain?

*Collier on Pride.*

**SODOM,** an ancient city of Palestine, in Asia, infamous in Scripture for the wickedness of its inhabitants, and their destruction by fire from heaven on that account, along with the adjacent cities of Gomorrah, Admah, and Zeboim, whose inhabitants had been equally wicked. Zoar was preserved at the intreaty of Lot. These cities had met with a glorious deliverance from captivity by the bravery of Abraham about sixteen years before. The place where these cities stood is now covered by the waters of the Dead Sea, or the lake Asphaltites. See ASPHALTITES.

**SODOMY,** an unnatural crime, so called from the city of Sodom, which was destroyed by fire for it. The delicacy of our English law treats it, in its very indictments, as a crime not fit to be named; *peccatum illud horribile, inter Christianos non nominandum.* The edict of Constantius and Constantine observes a similar taciturnity; *ubi scelus est id, quod non proficit scire, jubemus insurgere leges, armari iura gladio ultore, ut exquisitis penitibus subdientur infames, qui sunt, vel qui futuri sunt rei.* The Levitical law adjudged those guilty of this execrable evil to death, *Lev. xviii. 22, 23; xx. 15, 16;* and the civil law assigns the same punishment to it. Our ancient law commanded such miscreants to be burnt to death (*Brit. c. 9*), though *Fleta* says (*l. i. c. 37*) they should be buried alive; either of which punishments was indifferently used for this crime among the ancient Goths. At present our laws make it felony: *25 Hen. VIII. c. 6; 5 Eliz. c. 17.* And the rule of the law is, that if both are arrived at years of discretion, *agentes et consentientes pari pena plectantur.* *3 Inst. 50.* There is no statute in Scotland against sodomy; the libel of the crime is therefore founded on the divine law, and practice makes its punishment to be burning alive.

**SOE, n. s.** Scott. *sac.* A large wooden vessel with hoops, for holding water; a cowl.

A pump grown dry will yield no water; but pouring a little into it first, for one basin-full you may fetch up as many *soe-fulls.*

*More.*

**SOEVER**, *adv.* So and ever. A word properly joined with a pronoun, or adverb, as whosoever, whatsoever, howsoever.

What great thing soever a man proposed to do in his life, he should think of achieving it by fifty.

*Temple.*

What love soever by an heir is shown,  
Or you could ne'er suspect my loyal love. *Dryden.*

**SOFAT**, *n. s.* Fr. *sofa*, of Pers. *safat*. A seat covered at one time with carpets.

The king leaped off from the sofa on which he sat, and cried out, 'Tis my Abdallah.' *Guardian.*

I sing the sofa. I who lately sang  
Truth, Hope, and Charity, and touched with awe  
The solemn chords, and with a trembling hand,  
Escaped with pain from that adventurous flight,  
Now seek repose upon a humbler theme;  
The theme, though humble, yet august and proud  
The occasion—for the Fair commands the song.

*Cotoper.*

A SOFA, in the east, is a kind of alcove raised half a foot above the floor of a chamber or other apartment; and used as the place of state, where visitors of distinction are received. Among the Turks the whole floor of their state rooms is covered with a kind of tapestry, and on the window side is raised a sofa or sopha, laid with a kind of mattress covered with a carpet much richer than the other. On this carpet the Turks are seated, both men and women, like the tailors in England, cross-legged, leaning against the wall, which is bolstered with velvet, satin, or other stuff suitable to the season. Here they eat their meals; only laying a skin over the carpet to serve as a table cloth, and a round wooden board over all covered with plates, &c.

**SOFALA**, a country and town of Eastern Africa, at the mouth of a river of the same name. At the time of the arrival of the Portuguese it was a place of great importance for the gold and ivory brought in large quantities from the interior; but, since Mosambique became the capital of the Portuguese settlements, the fort of Quilimane has been the channel by which this trade is conducted. The Portuguese, however, still maintain a fort here, which holds the supremacy over those of Inhambane and Corrientes, and an annual vessel comes from Mosambique, bringing coarse cottons and other articles suited to the taste of the natives; receiving in return gold, ivory, and slaves.

The great bank of Sofala extends for two days sail, and appears to have been thrown up by the violence of the south-easterly winds, which generally prevail in direct opposition to the currents of many rapid rivers, which here flow into the sea. Ships, however, by carefully tracing their course, may find a channel of twelve fathoms, and should never go into a smaller depth. Whales are found here in vast multitudes.

The town is situated up a river, navigable only for small vessels, and having a bar at its entrance only twelve or fourteen feet deep at low water. The anchorage is about four miles from the fort; but ships ought not to enter without a pilot. Opposite to the mouth of the river is a small island, called also Sofala. The surrounding country is wild, and thinly inhabited, traversed by vast herds of elephants, the ivory from which affords a staple article of commerce. The people, in

their stature, color, habits, and language, appear nearly allied to the Kaffres. They are well armed, brave, and apparently quite independent. The villages consist of huts, interspersed with large trees like the Indian fig. On the upper part of the river is Zimboas, capital of the dominions of the Quiteue. According to Vincent and other learned enquirers Sofala is the Ophir of Solomon, whither the fleets of that monarch made regular voyages in search of gold. The town is in long.  $34^{\circ} 45' E.$ , lat.  $20^{\circ} 15' S.$

**SOFFIT**, or **SOFFITA**, in architecture, any timber ceiling formed of cross beams of flying cornices, the square compartments or panels of which are enriched with sculpture, painting, or gilding; such are those in the palaces of Italy, and in the apartments of Luxembourg at Paris.

**SOFITA**, c. **SOFFIT**, is also used for the underside or face of an architrave; and more particularly for that of the corona or larmier, which the ancients called lacunar, the French plafond, and we usually the drip. It is enriched with compartments of roses; and in the Doric order has eighteen drops, disposed in three ranks, six in each, placed to the right of the guttae, at the bottom of the triglyphs.

**SOFIA**, or **SOPHIA**, the capital of Bulgaria, European Turkey, is pleasantly situated in a plain at the foot of the mountains of Argentaro, on the Bogana. It carries on, though an inland place, a very extensive trade, which is for the most part in the hands of Greeks and Armenians, and contains a number of handsome baths and mosques, but the streets are narrow, uneven, and dirty, and the air unhealthy. Sophia was built by the emperor Justinian on the ruins of the ancient Sardica. It is the see of a Greek metropolitan and of a Catholic bishop. It stands on the high road leading from Constantinople to Belgrade. Inhabitants 50,000. It is 230 miles W. N. W. of Constantinople, and 160 W. N. W. of Adrianople.

<b>SOFT</b> , <i>adj. &amp; interj.</i>	Sax. <i>soft</i> ; Belg.
<b>SOLTES</b> , <i>c. a. &amp; n.</i>	<i>soft</i> ; Teut. <i>saufle</i> .
<b>SOFTLY</b> , <i>adv.</i>	Tender; smooth; du-
<b>SOFTNER</b> , <i>n. s.</i>	tile; flexible; hence
<b>SOFTNESS</b> .	mild; gentle; simple; meek; timorous; placid; weak: as an interjection, it means hold, stop! to soften is to mollify; make less hard; intemperate; make easy: as a verb neuter to grow less hard; to relax: the adverb and noun substantives follow the sense of soft, adjective.

Ahab rent his clothes, and went softly.  
*1 Kings xxi. 27.*  
What went ye out for to see? a man clothed in soft raiment? behold, they that wear soft raiment are in kings' houses.  
*Matthew.*

Such was the ancient simplicity and softness of spirit, which sometimes prevailed in the world, that they, whose words were even as oracles amongst men, seemed evermore loth to give sentence against any thing publickly received in the church of God.

*Hooke.*

What he hath done famously, he did it to that end; though soft conscienced men can be content to say, it was for his country. *Shakspeare. Coriolanus.*

Thou art their soldier, and, being bred in broil,  
Hast not the soft way, which thou dost confess

Were fit for thee to use, as they to claim,  
In asking their good loves. *Id.*

Would my heart were flint, like Edward's ;  
Or Edward's soft, and pitiful like mine. *Shakspeare.*

Her voice was ever soft,  
Gentle, and low ; an excellent thing in women. *Id.*

Oh ! come in, *Aemilia* ; *Id.*

Soft, by and by, let me the curtains draw. *Id.*

He may soften at the sight of the child ; *Id.*

The silence often of pure innocence  
Persuades, when speaking fails. *Id.*

Some bodies are hard, and some soft : the hardness is caused by the jejuneness of the spirits, which, if in a greater degree, makes them not only hard, but fragile. *Bacon.*

Bodies, into which the water will enter, long seething will rather soften than indurate. *Id.*

*Natural History.*

Softness cometh by the greater quantity of spirits, which ever induce yielding and cession ; and by the more equal spreading of the tangible parts, which thereby are more sliding and following ; as in gold. *Id.*

Solid bodies, if very softly percussed give no sound ; as when a man treadeth very softly upon boards. *Bacon.*

This virtue could not proceed out of fear or softness ; for he was valiant and active. *Id.*

*Henry VII.*

Softness of sounds is distinct from the exhilirity of sounds. *Bacon.*

This sense is also mistress of an art  
Which to soft people sweet perfumes doth sell ;

Though this dear art doth little good impart,  
Since they sinell best that do of nothing smell. *Davies.*

But soft, my muse ; the world is wide,  
And all at once was not descried. *Suckling.*

A few divines of so soft and servile tempers as disposed them to so sudden acting and compliance. *King Charles.*

They turn the softness of the tongue into the hardness of the teeth. *Holyday.*

So long as idleness is quite shut out from our lives, all the sins of wantonness, softness, and effeminacy are prevented ; and there is but little room for temptation. *Taylor.*

He was not delighted with the softnesses of the court. *Clarendon.*

Spirits can either sex assume ; so soft God uncompounded is their essence pure. *Milton.*  
Our torments may become as soft as now severe. *Id.*

The solemn nightingale tuned her soft lays. *Id.*  
Sleep falls with soft slumberous weight. *Id.*

I will soften stony hearts. *Id.*

For contemplation he and valour formed,  
For softness she and sweet attractive grace. *Id.*

On her soft axis while she paces even,  
She bears thee soft with the smooth air along. *Id.*

Less winning soft, less amiably mild. *Id.*

The deceiver soon found this soft place of Adam's, and innocency itself did not secure him. *Glanville.*

The sun shining upon the upper part of the clouds made them appear like fine down or wool, and made the softest sweetest lights imaginable. *Browne's Travels.*

Her stubborn look  
This softness from thy finger took. *Waller.*

Hot and cold were in one body fixt,  
And soft with hard, and light with heavy mixt. *Dryden.*

However soft within themselves they are,  
To you they will be valiant by despair. *Id.*

When some great and glorious monarch dies,  
Soft whispers first, and mournful murmurs, rise,  
Among the sad attendants ; then the sound  
Soon gathers voice. *Id.*

He bore his great commission in his look,  
But sweetly tempered awe, and softened all he spoke. *Id.*

In this dark silence softly leave the town,  
And to the general's tent direct your steps. *Id.*

The king must die ;  
Though pity softly plead within my soul, Yet he must die that I may make you great. *Id.*

Improve these virtues with a softness of manners, and a sweetness of conversation. *Id.*

One king is too soft and easy ; another too fiery. *L'Estrange.*

Hard and soft are names we give things, only in relation to the constitutions of our own bodies ; that being called hard, which will put us to pain sooner than change figure, by the pressure of any part of our bodies ; and that soft, which changes the situation of its parts upon an easy touch. *Locke.*

Saving a man's self, or suffering, if with reason, is virtue ; if without it, is softness or obstinacy. *Grew.*

Our friends see not our faults, or conceal them, or soften them by their representation. *Addison.*

Their arrow's point they soften in the flame,  
And sounding hammers break its barbed frame. *Gay.*

Curst be the verse, how well so'er it flow,  
That tends to make one worthy man my foe  
Give virtue scandal, innocence a fear,  
Or from the soft-eyed virgin steal a tear. *Pope.*

Yet soft his nature, though severe his lay ;  
His anger moral, and his wisdom gay. *Id.*

Soft were my numbers ; who could take offence,  
When smooth description held the place of sense ? *Id.*

Musick the fiercest griefs can charm ;  
Musick can soften pain to ease,  
And make despair and madness please. *Id.*

Those softers and expedient-mongers shake their heads so strongly that we can hear their pockets jingle. *Swift.*

An idle and soft course of life is the source of criminal pleasures. *Broome.*

A wise man, when there is a necessity of expressing any evil actions, should do it by a word that has a secondary idea of kindness or softness ; or a word that carries in it rebuke and severity. *Watts's Logick.*

I would correct the harsh expressions of one party, by softening and reconciling methods. *Watts.*

Who but thyself the mind and ear can please  
With strength and softness, energy and ease ? *Harte.*

SOGDI, in ancient geography, a people of India, on this side of the Ganges. Quintus Curtius places them on the left bank of the Indus. The same historian says that Alexander built a city in the country of these people, and called it Alexandria. He also relates that when some of these people, who resided not far from the country of Odin's Goths, were condemned to death by Alexander on account of a revolt, they rejoiced greatly, and testified their joy by singing verses and dancing. When the king enquired the reason of their joy, they answered, that 'being soon to be restored to their ancestors by so great a conqueror, they could not help celebrating so honorable a death, which was the wish of all brave men.'

in their own accustomed songs.' This correspondence of manners and principles between the Scandinavians and the Sogdians seems to furnish a striking proof of Odin's migration from the east to the north.

**SOGDIANA**, in ancient geography, a country of Asia, bounded on the north by Scythia, east by the Sacæ, south by Bactriana, and west by Margiana, now called Usbec, or Zagatay. Maracanda, now Samarcand, was the capital.

**SOGDIANUS**, a short-lived usurper of the Persian throne, who murdered his brother Xerxes II., and was deservedly killed by his third brother Ochus, after a reign of seven months. See PERSIA.

**SOHAM**, or MONK-SOHAM, a market town and parish in Staple hundred, Cambridge, five miles south-east of Ely, and seventy-one from London, on the borders of Suffolk, on the east side of the Cam. The town is large and irregularly built. In the time of the Anglo-Saxons it was a place of some importance, and appears to have been the seat of the East-Anglian bishops. It has a spacious chapel, alms-houses, and a large charity-school. The chief produce of the place is cheese, in quality like that of Stilton. Market on Saturday. Fair, April 20th.

**SOHIL**, or ZOLVOM VARMEGYF, a palatinate of north-west Hungary, having a superficial extent of about 1060 square miles. It lies almost wholly among the Carpathians, and is abundant in pasture and minerals. The chief town New Sohil.

**SOIL**, *v. a. & n. s.* { Sax. *rlhan*; Fr. *solain*.  
**SOIL'NESS**, *n. s.* { *ler*. To foul; dirt; pollution;  
**SOIL'TURE**. { lute; stain; dung; manure; purge (applied to cattle): the noun substantive means dirt; foulness; gravel; vegetative earth; land; dung; soiliness and soilure; stain; dirt; foulness.

If I soil

Myself with sin, I then but vainly toil. *Sandys.*  
A silly man in simple weeds forlorn,  
And soiled with dust of the long dried way.

*Faerie Queene.*

The soiled horse.

*Shakspeare.*

By indirect ways

I met this crown; and I myself know well  
How troublesome it sat upon my head:  
To thee it shall descend with better quiet:  
For all the soil of the achievement goes  
With me into the earth. *Id. Henry IV.*

That would be a great soil in the new gloss of your marriage. *Shakspeare.*

Dorset, that with fearful soul  
Leads discontented steps in foreign soil,  
This fair alliance shall call home  
To high promotions. *Id.*

He merits well to have her, *Id.*

Not making any scruple of her soilure. *Id.*

Although some hereticks have abused this earth,  
yet the sun is not soiled in passage. *Bacon's Holy War.*

Judgment may be made of waters by the soil whereupon they run. *Id. Natural History.*

Make proof of the incorporation of silver and tin, whether it yield no soiliness more than silver. *Bacon.*

I would not soil these pure ambrosial weeds  
With the rank vapours of this sin-worn mould. *Milton.*

Her spots thou see'st  
As clouds, and clouds may rain, and rain produce  
Fruits in her softened soil. *Id. Paradise Lost.*

O unexpected stroke, worse than of death.  
Must I thus leave thee, Paradise! Thus leave  
Thee, native soil! these happy walks and shades,  
Fit haunts of gods? *Milton.*

A lady's honour must be touched,  
Which, nice as ermines, will not bear a soil. *Dryden.*

Improve land by dung, and other sort of soils. *Mortimer.*

One, who could not for a taste o' th' flesh come in,  
Licks the soiled earth,  
While reeking with a mangled Ombit's blood. *Tate.*

Men now present, just as they soil their ground;  
not that they love the dirt, but that they expect a crop. *South.*

The haven has been stopped up by the great heaps  
of dirt that the sea has thrown into it; for all the  
soil on that side of Ravenna has been left there insen-

sibly by the sea. *Addison.*

If the eye-glass be tinted faintly with the smoke  
of a lamp or torch, to obscure the light of the star,  
the fainter light in the circumference of the star  
ceases to be visible; and the star, if the glass be  
sufficiently soiled with smoke, appears something  
more like a mathematical point. *Newton.*

An absent hero's bed they sought to soil,  
An absent hero's wealth they made their spoil. *Pope.*

The first cause of a kingdom's thriving is the  
fruitfulness of the soil, to produce the necessaries and  
conveniences of life; not only for the inhabitants,  
but for exportation. *Swift.*

No dews give freshness to this blasted soil. *Maturin.*

**SOILS.** On this subject we have entered  
pretty fully in the article AGRICULTURE. Here,  
however, we shall follow the condensed view of  
the chemistry of soils, as given by Sir H. Davy.

'In cases,' says this writer, 'where a barren  
soil is examined with a view to its improvement,  
it ought in all cases, if possible, to be compared  
with an extremely fertile soil in the same neighbourhoold,  
and in a similar situation: the difference  
given by their analyses would indicate the  
methods of cultivation, and thus the plan of im-  
provement would be founded upon accurate  
scientific principles.'

'If the fertile soil contained a large quantity  
of sand, in proportion to the barren soil, the pro-  
cess of melioration would depend simply upon  
a supply of this substance; and the method  
would be equally simple with regard to soils de-  
ficient in clay or calcareous matter. In the ap-  
plication of clay, sand, loam, marle, or chalk,  
to lands, there are no particular chemical prin-  
ciples to be observed; but, when quicklime is  
used, great care must be taken that it is not ob-  
tained from the magnesian limestone; for in this  
case, as has been shown by Mr. Tennant, it is  
exceedingly injurious to land. The magnesian  
limestone may be distinguished from the com-  
mon limestone by its greater hardness, and by  
the length of time that it requires for its solution  
in acids; and it may be analysed by the process  
for carbonate of lime and magnesia.'

When the analytical comparison indicates an  
excess of vegetable matter as the cause of steri-  
lity, it may be destroyed by much pulverization,

and exposure to air, by paring and burning, or the agency of lately made quicklime. And the defect of animal and vegetable matter must be supplied by animal or vegetable manure. The general indications of fertility and barrenness, as found by chemical experiments, must necessarily differ in different climates, and under different circumstances. The power of soils to absorb moisture, a principle essential to their productiveness, ought to be much greater in warm and dry countries, than in cold and moist ones; and the quantity of fine aluminous earth they contain should be larger. Soils likewise that are situate on declivities ought to be more absorbent than those in the same climate on plains or in valleys.

The productiveness of soils must likewise be influenced by the nature of the sub-soil, or the earthy or stony strata on which they rest; and this circumstance ought to be particularly attended to, in considering their chemical nature, and the system of improvement. Thus a sandy soil may owe its fertility to the power of the sub-soil to retain water; and an absorbent clayey soil may occasionally be prevented from being barren, in a moist climate, by the influence of a sub-stratum of sand or gravel. Those soils that are most productive of corn contain always certain proportions of aluminous or calcareous earth in a finely divided state, and a certain quantity of vegetable or animal matter.

The quantity of calcareous earth is however very various, and in some cases exceedingly small. A very fertile corn soil from Orniston in East Lothian afforded in 100 parts only eleven parts of mild calcareous earth; the finely divided clay amounted to forty-five parts. It lost nine in decomposed animal and vegetable matter, and four in water, and exhibited indications of a small quantity of phosphate of lime. This soil was of a very fine texture, and contained very few stones or vegetable fibres. It is not unlikely that its fertility was in some measure connected with the phosphate; for this substance is found in wheat, oats, and barley, and may be a part of their food.

A soil from the low lands of Somersetshire, celebrated for producing excellent crops of wheat and beans without manure, I found to consist of one-ninth of sand, chiefly siliceous, and eight-ninths of calcareous marle tinged with iron, and containing about five parts in 100 of vegetable matter. I could not detect in it any phosphate or sulphate of lime, so that its fertility must have depended principally upon its power of attracting principles of vegetable nourishment from water and the atmosphere.

Mr. Tillet, in some experiments made on the composition of soils at Paris, found that a soil composed of three-eighths of clay, two-eighths of river sand, and three-eighths of the parings of limestone, was very proper for wheat. In general, bulbous roots require a soil much more sandy, and less absorbent, than the grasses. A very good potatoe soil, from Varsel in Cornwall, afforded seven-eighths of siliceous sand; and its absorbent power was so small that 100 parts lost only two by drying at 400° Fahrenheit. Plants and trees, the roots of which are

fibrous and hard, and capable of penetrating deep into the earth, will vegetate to advantage in almost all common soils that are moderately dry, and do not contain a very great excess of vegetable matter.

The soil taken from a field at Sheffield-place in Sussex, remarkable for producing flourishing oaks, was found to consist of six parts of sand, and one part of clay and finely divided matter. And 100 parts of the entire soil, submitted to analysis, produced water 3, silex 54, alumina 28, carbonate of lime 3, oxide of iron 5, decomposing vegetable matter 4, loss 3.

From the great difference of the causes that influence the productiveness of lands, it is obvious that in the present state of science, no certain system can be devised for their improvement, independent of experiment; but there are few cases in which the labor of analytical trials will not be amply repaid by the certainty with which they devote the best methods of melioration; and this will particularly happen when the defect of composition is found in the proportions of the primitive earths. In supplying animal or vegetable manure, a temporary food only is provided for plants, which is in all cases exhausted by means of a certain number of crops; but when a soil is rendered of the best possible constitution and texture with regard to its earthy parts, its fertility may be considered as permanently established. It becomes capable of attracting a very large portion of vegetable nourishment from the atmosphere, and of producing its crops with comparatively little labor and expense.

**S O I L I N G** is a term used, in agriculture, for the practice of supporting animals of different kinds, in the summer season, with green food of various sorts, cut daily. A vast number of different plants and grasses may be had recourse to in this intention, as almost all those which have a quick and luxuriant growth; as lucern, tares, clover, saint-foin, chicory, &c. By having recourse to soiling, a greater variety of plants may be consumed, and consequently prevented from running to waste. This is a practice, which is further recommended by the food being consumed with much less waste than when fed upon the land; by the great increase of good manure that is produced; and by that of the stock feeding with less interruption and inconvenience, from their being more effectually shaded from the excessive heat of the sun, and better protected from the attacks of flies and other insects. In all these respects it would seem to have a great superiority over that of letting the animals range over the pastures or other grass lands. One great and principal objection that has been opposed to this plan of feeding, is that of the expense of conducting the business being too considerable. But the extensive trials of Mr. Mure and Young, and other cultivators and promoters of the practice, fully show that it may be executed at an expense that can never form any real objection. It has likewise been contended, in opposition to this practice, that such parts of the live stock as are in milk do not afford it so abundantly as when fed in the pastures, but which is probably a mere

supposition, as it has been almost invariably found that most of the green crops that are cut and employed in this manner have greater effect in exciting that secretion than the common pasture-grass. But as particular sorts of vegetables, as well as other substances, act more powerfully on some of the glandular organs than others, it is probable that some kinds of plants may have a greater tendency to promote this kind of secretion than others, and, on this account, cows fed on one sort of food in this practice may afford less milk than on others.

Mr. Close found it advantageous to soil horses in cheap thatched sheds, in which they have room to walk and roll; and with bullocks and cows in stalls seven feet wide, each stall holding two fastened by the necks to the sides, by which they are prevented from inconveniencing each other while feeding. In this method of management, it is not unlikely that great benefit might be produced by having low sheds fixed up round the yards, or other places, with suitable contrivances for the cattle receiving the food from, so as to cause the least possible loss; and by having the stock in all cases properly sorted, in regard to size, kind, and strength. Such sheds might, in some instances too, be provided, with very great utility and convenience, near to the grounds whence the food is raised and procured. In this way a great saving of labor and expense would necessarily be made in different situations.

In all cases where low sheds are made use of in this intention, there ought to be proper drains formed for conveying the urine and other fluid matters into the littered yards, and other places designed for forming manure, so that they may have a constant operation in the preparation of it. It may also be necessary and beneficial in this practice, sometimes to have different sets and sorts of animals, in order that the refuse of the food left by one set may be eaten by another, and no kind of loss sustained.

But, in order that this business may be conducted in the most beneficial manner, it is necessary the farmer should carefully attend to the culture of such green crops as have been mentioned above, and which can be best applied in this way, on a scale fully sufficient for this purpose. In the view of early application, a full proportion of lucern should be raised on the most deep and fertile soils; and on the better sorts of land that may be in the condition of fallow, clover, and tare crops may be grown. These must be sown so as to come into use at different times; the first crop of winter tares succeeding to the early cut lucern; the later put in winter tares following, after which the clover will most probably be ready, to which the third crop of tares and the second cut of lucern may succeed; at a still later period the spring tares may be employed; and, in succession to this, the third cutting of lucern will in general be ready. But there are many other plants that may perhaps be made use of in this way, as chicory, which may be had recourse to with advantage in this management, as, in soils that are tolerably fertile, it will admit of repeated cutting. With these different crops there will probably be seldom any necessity for the use of common cut grass;

though this may be employed, if there should be occasion. The proper foddering of the animals in this practice is a matter of great consequence. It is observed in the Annals of Agriculture that one great object is never to suffer them to have too much at once; as, when this is the case, from the heat of the season, it quickly takes on a degree of fermentation, and is rejected or only picked among by the cattle, in consequence of which much waste may be committed, which would otherwise be avoided; and, in addition, it is not improbable but that the stock may thrive better by having their food more frequently, and of course in a more fresh state. But it should never on any account be left packed in the carts for any length of time. The best mode seems to be that of adapting the size of the cart to the exact consumption of the stock; as in this way the whole may be conveniently distributed in the cribs or racks at once the moment it is wanted before it becomes unpalatable by fermentation, and the least possible loss may be incurred. It is constantly necessary to watch the conduct of laborers in this particular, as they are in general much disposed to over-feed. And there is another matter which should not be disregarded, which is that of not suffering the crops that are used in soiling to advance to too great a head; as, by attention in this respect, the food may be more cleanly eaten up and consumed.

'However, it must be observed,' says a late writer, 'that in this system litter becomes an object of the greatest importance, as the large quantity of urine that is made by cattle, when soiled on these luxuriant sorts of green food, is capable, by its moistening property, of adding in the hot season, the more quick fermentation of such materials, and of reducing a very large proportion into the state of manure. In this view, the attentive farmer should, therefore, make an abundant provision in the winter time of other sorts of materials, where a proper supply of straw cannot be reserved for the purpose. There are various matters that may be made use of in this intention, such as stubble, fern, rushes, and other aquatic plants, which may be cut and raked together in the places in which they are most abundantly produced, in order to be stacked up for future use. Leaves might also, in woody situations, be useful for the same purpose. And, in addition to these vegetable matters, there are other substances that are capable of being employed with utility, such as peat or bog-earth, fresh vegetable mould, sand, and the scrapings of roads; as, during the decomposition of the various vegetable materials made use of in this practice, not only much hydrogen and carbonic gas are set at liberty, but ammonia is formed in large quantities, in the manner that has already been explained, which, from its action upon such earthy materials, is highly useful in bringing them into the state of manure for the improvement of lands. Some other sorts of matters might likewise, in different situations, be employed in this manner with considerable benefit; such as saw-dust, when to be procured in large quantities; and the refuse materials of different manufactories, as the weld of the calico-printer, the bark of the tanner, &c. Many of these kinds

of substances are excellent for the purpose of manure.'

It is remarked by the Rev. Mr. Duncan, in the fourth volume of Communications, that he always keeps his work-horses on red clover through the summer; and they are as healthy and fit for labor as any of his neighbours' that are turned out into the pasture. Last year he cut the clover three times, and thirty falls or perches yielded as much as one horse was able to consume. He has frequently intended to try a crop of goose-grass for hay, upon some piece of ground which was not to remain in pasture; but he has always met with some avocation at the time when the seed of this grass could be procured. He is surprised that goose-grass should be so long neglected, nay despised. It is considered as a weed among rye-grass, though he observed that the horses are not of the same opinion. Its hay is most substantial, and, were it allowed to come to maturity, its seed would, he supposes, be little inferior in weight to oats, and would probably be an excellent substitute for them in the food of horses. And it is added, that he who can procure 200 carts of dung from the same extent of ground where 100 only were formerly produced, certainly possesses a double power of improving it. A great reserve of straw is necessary for litter to horses, when living on red clover. When the straw fails, some bed their horses with dried rushes; but rushes contribute very little to the manufacture of dung. When fern, or, as it is sometimes called, the 'braken,' can be gotten, he would recommend it as next to straw for littering horses or black cattle, and as the best of all land vegetables for the dunghill. Mr. Rawson in the same work also highly approves of, and has long practised, the feeding of horses and spring cattle in summer upon clover; he has found that an acre of clover, cut and carried to the cattle and horses in their bovels and stalls, will maintain double the quantity of stock to an acre pastured; besides the very great quantity of manure produced by this mode of feeding, which secures almost to a certainty the turnip crop. In a trial made by Mr. Mure in soiling bullocks with winter tares, as stated in the Annals of Agriculture, the advantages of this practice over that of feeding in the pastures is very fully shown. The same system of soiling has been practised with advantage by many others, as Mr. J. Wright, &c.

Sir Humphrey Davy agrees with these practical men, in thinking that, in feeding cattle with green food, there are many advantages in the practice of soiling, or supplying them with food, where their manure is preserved out of the field; the plants it is conceived are less injured when cut, than when torn or jagged by the teeth of the cattle, and no food is wasted by being trodden down. The cattle are likewise obliged to feed without making any selection; and in consequence the whole food is consumed: the attachment or dislike to a particular kind of food exhibited by animals, affords, it is supposed, no proof of its nutritive properties or powers, as cattle at first refuse linseed cake, one of the most nutritive substances upon which they can be fed.

The writer of the account of the state of agri-

culture in the county of Middlesex has however observed, in opposition to this system, that though 'it has lately been suggested by several writers, that carrying grass into the yards, and giving it to cattle there, is more adviseable than permitting them to collect their own food; where the party can manure half his land annually, or the whole every second year, it may, it is supposed, be expected to support such a high degree of exhaustion; but in other cases the pasture would soon be so much impoverished, as to produce nothing for the owner of it to mow. Meadows which can be flooded by art at any period of summer, would probably, too, it is thought, admit of having their produce continually carried off; in all other cases such a system would, in the opinion of the writer, in a short time ruin the land.'

'The increased labor and expense of such a practice would also, it is said, render it unprofitable; one man employed in that manner, with a horse and cart, could not attend the cattle, and bring in the produce of many acres, though it would cost a grazier in this county annually, it is supposed, £113; to which ought to be added, that the manure would be wasted in such a manner as to lose a large moiety of it; in all which ways £120 would be expended, which is a greater sum than this practice is calculated to repay.'

'The only advantage which it promises is, it is said, to avoid the damage done by the treading of cattle; it must be admitted that in wet seasons and deep grass this is considerable; but a few additional acres would, it is believed, supply a similar quantity of herbage at a less expense; where that cannot be obtained, reducing the number of cattle would, it is said, have the same effect, and might be done without incurring so great a diminution of profit as the foregoing £120 would certainly be.'

'It is obvious,' the writer says (after stating other objections), 'that this is one of the closet systems of supporting cattle, which cannot be reduced to practice beyond the extent of a very few acres, and only then when it can be done without any additional men or horses. If the expense of the men and teams is to be brought into the account, it will, it is said, be altogether unprofitable. Such an expense would, in this county, amount, it is supposed, in fifteen weeks, to £34 10s.; which, divided by the number of acres (ten), proves the charge to be on each acre £3 9s.; or, divided by the number of oxen (six), it would be on each £5 16s.: add this extra expense, it is said, to a long list of usual and unavoidable charges, and it will swell the account to such a sum, as would exceed the value of the improvement of any cattle whatever.' We leave the decision on these arguments to the practical reader.

SO'JOURN, v. n. & n. s. } Fr. *sejourner*; Ital.

So'JOURNER, n. s. } seggiornare. To dwell any where for a time; live as not at home: the noun substantives both corresponding.

The *sojourning* of Israel, who dwelt in Egypt, was four hundred and thirty years. Exodus xii. 40.

We are strangers and *sojourners*, as were all our fathers: our days on earth are as a shadow.

If, till the expiration of your month,  
You will return and *sojourn* with my sister,  
Dismissing half your train, come then to me.

*Shakspeare.*

The princes, France and Burgundy,  
Long in our court have made their amorous *sojourn*.

*Id.*

The soldiers first assembled at Newcastle, and  
there *sojourned* three days.

*Hayward.*

Here dwells he; though he *sojourns* every where  
In progress, yet his standing house is here. *Donne.*

To *sojourn* in that land

He comes invited. *Milton's Paradise Lost.*

Thee I revisit now,  
Escaped the Stygian pool, though long detained  
In that obscure *sojourn*.

*Id.*

Waves o'erthrew

Busiris, and his Memphian chivalry,  
While with perfidious hatred they pursued  
The *sojourners* of Goshen.

*Id.*

Not for a night, or quick revolving year;

Welcome an owner, not a *sojourner*.

*Dryden.*

He who *sojourns* in a foreign country refers what  
he sees abroad to the state of things at home.

*Atterbury.*

SOISSONNOIS, a ci-devant province of France, bounded on the north by Laonnois, east by Champagne, south by Brie, and west by Valois. It was inhabited by the ancient Suessiones, a brave nation of Gaul, in the time of Caesar. It is fertile, and abounds in corn, wood, and pasture. It now forms, along with the ci-devant province of Vermandois, the department of Aisne.

SOISSONS, an ancient and large town of France, in the department of Aisne, and late province of Soissonnois. In the time of Julius Caesar it was called Noviodunum, and was the capital of the Suessiones; whence the modern name. It was then the capital of a kingdom of the same name, under the first race of the French monarchs. It contains now about 7500 inhabitants, and is a bishop's see. The environs are charming, but the streets are narrow, and the houses ill built. The fine cathedral has one of the most considerable chapters in the kingdom. St. Louis, Philip III., and Louis XIV., were crowned in it. The castle, though ancient, is not that in which the kings of the first race resided. Soissons is seated in a very pleasant and fertile valley, on the Aisne, and has a good trade in corn, and its manufactures of coarse linen, ropes, thread, leather, and stockings.

SOL, the sun, in astronomy, astrology, &c.  
See ASTRONOMY, Index.

Sol, in chemistry, is gold; thus called from an opinion that this metal is in a particular manner under the influence of the sun.

Sol, in heraldry, denotes Or, the golden color in the arms of sovereign princes.

Sol, in music, the fifth note of the gamut, ut, re, mi, fa, sol, la. See GAMUT.

Sol, or Sou, in the French currency, a coin made up of copper mixed with a little silver, and worth upwards of an English halfpenny, or the twenty-third part of an English shilling. The sol, when first struck, was equal in value to twelve deniers Tournois, whence it was also called douzain, a name it still retains, though its ancient value be changed; the sol having been

since augmented by three deniers, and struck with a puncheon of a fleur-de-lis, to make it current for fifteen deniers. Soon after the old sols were coined over again, and both old and new were indifferently made current for fifteen deniers. In 1709 the value of the same sols was raised to eighteen deniers. Towards the end of the reign of Louis XIV. the sol of eighteen deniers was again lowered to fifteen; and by Louis XVI. it was reduced to the original value of twelve.

Sol, in Dutch currency. The Dutch have two kinds of sols; the one of silver, called sols de gros, and likewise schelling; the other of copper, called also the stuver.

SOLACE, v. a., v. n., & n. s. Old Fr. *solacier*; Ital. *sollazzare*; Lat. *solatium*. To comfort; cheer; amuse: to take comfort; be recreated: the comfort or amusement yielded.

Therein sat a lady fresh and fair,  
Making sweet *solace* to herself alone;  
Sometimes she sung as loud as lark in air,  
Sometimes she laughed, that nigh her breath was gone.

*Spenser's Faerie Queene.*

If we have that which is meet and right, although they be glad, we are not to envy them this their *solace*: we do not think it a duty of ours to be in every such thing their tormentors.

*Hooker.*

We will with some strange pastime *solace* them.

*Shakspeare.*

Were they to be ruled, and not to rule,  
This sickly land might *solace* as before.

*Id.*

One poor and loving child,  
But one thing to rejoice and *solace* in,  
And cruel death hath catched it from my sight.

*Id.*

The birds with song  
*Solace* the woods.

*Milton.*

Though sight be lost,  
Life yet hath many *solaces*, enjoyed  
Where other senses want not their delights,  
At home in leisure, and domestick ease,  
Exempt from many a care and chance, to which  
Eye-sight exposes daily men abroad.

*Id.*

If I would delight my private hours  
With musick or with poem, where so soon  
As in our native language can I find  
That *solace*? *Id. Paradise Regained.*

Through waters and through flames I'll go,  
Sufferer and *solace* of thy woe.

*Prior.*

Bad thoughts are as infectious as bad company; and good thoughts *solace*, instruct, and entertain the mind, like good company.

*Mason.*

SOLÆUS, or SOLEUS, in anatomy, one of the extensor muscles of the foot, rising from the upper and hinder parts of the tibia and fibula.

SOLAN, a country of Central Africa, between Tombuctoo and Cassina. It was described to Horneman as one of those composing the extensive country of Haoussa or Houssa, on the north bank of the Niger; but few particulars are known respecting it.

SOLANDER (Daniel Charles), M. D., an eminent Swedish naturalist, born in the province of Nordland, in Sweden, in 1736. He studied at Upsal, and was a pupil of the great Linnaeus. He took his degree at Upsal, and in 1760 visited England, where he continued some years, and was prevailed on by his friend Sir Joseph Banks, to accompany captain Cook in his first voyage of discovery round the world in 1768. In 1773 he was appointed one of the librarians of the

**British Museum.** He died of an apoplectic fit in 1782.

**SOLANDER'S ISLAND**, an island in the South Pacific Ocean, on the south coast of New Zealand, discovered by captain Cook. It is nothing but a barren rock, about a mile in circuit, remarkably high, and lies full five leagues distant from the main. The shore of the main lies nearest east by south and west by north, and forms a large open bay, in which there is no appearance of any harbour, or shelter for shipping. The surface of the country is broken into craggy hills, of a great height, on the summits of which are patches of snow. Wood was seen not only in the valleys, but upon the highest ground, yet no appearance of its being inhabited. Long. 192° 49' W., lat. 46° 31' S.

**SOLANDRA**, in botany, a genus of plants, ranked by some botanists under the class monadelphia, and the order polyandria; but by Mr. Lee, of Hammersmith, it is arranged under the class polygamia, and in the order monoecia. It is ranked in the natural system under the thirty-eighth order, tricoceæ. The calyx is simple; the capsule oblong, wreathed, and five-celled; the seeds are many, disposed in cells in a double order. The valves, after maturity, are divaricated even to the base, and winged inwards by the partition. The only species is *S. lobata*. This genus was first named Solandra, in honor of Dr. Solander, by Murray, in the fourteenth edition of the *Systema Vegetabilium*.

**SOLANUM**, in botany, a genus of the monogyna order, belonging to the pentandria class of plants; natural order twenty-eighth, luridæ: CAL. inferior: cor. rotate, and generally mono-phyllous: the fruit a berry, bilocular, and containing many small and flat seeds. Of this genus there are sixty-six species, most of them natives of the East and West Indies. The most remarkable are the following:—1. *S. dulcamara*, a native of Britain and of Africa, is a slender climbing plant, rising to six or more feet in height. The leaves are generally oval, pointed, and of a deep green color; the flowers hang in loose clusters, of a purple color, and divided into five pointed segments. The calyx is purple, persistent, and divided into five. The five filaments are short, black, and inserted into the tube of the corolla. The anthers yellow, erect, and united in a point as usual in this genus. The style is long, and terminates in an obtuse stigma. The berry, when ripe, is red, and contains many flat yellowish seeds. It grows in hedges well supplied with water, and flowers about the end of June. On chewing the roots we first feel a bitter, then a sweet taste; hence the name. The berries are poisonous, and may easily be mistaken by children for currants. The stipites or younger branches are directed for use, and may be employed either fresh or dried: they should be gathered in the autumn. They are given in decoction or infusion. Razou directs the following:—Take dried dulcamara twigs half a dram, and pour upon it sixteen ounces of spring water, which must be boiled down to eight ounces; then strain it: three or four tea-spoonfuls to be taken every four hours, diluted with milk to prevent its exciting a nausea. Several authors say

that the dulcamara partakes of the milder powers of the nightshade, joined to a resolvent and sapo-naceous quality; hence it promotes the secretions of urine, sweat, the menses, and lochia. It is recommended in a variety of disorders; but particularly in rheumatisms, obstructed menses, and lochia; also in some obstinate cutaneous diseases.

2. *S. longum*. This plant is herbaceous, but grows rank. The flowers are blue; and the fruit is six or eight inches long, and proportionally thick. It is boiled and eaten as the egg-plant.

3. *S. lycopersicon*, the love apple, or tomato, cultivated in gardens in the warmer parts of Europe and in all tropical countries. The stalk is herbaceous, the leaves pinnated, oval, pointed, and deeply divided. The flowers are on simple racemi: they are small and yellow. The berry is of the size of a plum: they are smooth, shining, soft; and are either of a yellow or reddish color. The tomato is in daily use; being either boiled in soups or broths, or served up as garnishes to flesh meats.

4. *S. melongena*, the egg plant, or vegetable egg. This is also cultivated in gardens, particularly in Jamaica. It seldom rises above a foot in height. The stalk is herbaceous and smooth; the leaves oval and downy; the flowers are large and blue; the fruit is as big as, and very like, the egg of a goose. It is often used boiled as a vegetable along with animal food or butter, and supposed to be aphrodisiac, and to cure sterility.

5. *S. nigrum*, nightshade, common in many places in Britain about dunghills and waste places. It rises to about two feet in height. The stalk herbaceous; the leaves alternate, irregularly oval, indented, and clothed with soft hairs. The flowers are white; the berries black and shining. It appears to possess the deleterious qualities of the other nightshades in a very high degree; and even the smell of the plant is said to cause sleep. The berries are equally poisonous with the leaves; causing cardialgia, and delirium, and violent distortions of the limbs in children. Mr. Gataker in 1757 recommended its internal use in old sores, in scrofulous and cancerous ulcers, cutaneous eruptions, and in dropsies. He says that one grain infused in an ounce of water sometimes produced a considerable effect; that in the dose of two or three grains it seldom failed to evacuate the first passages, to increase very sensibly the discharges by the skin and kidneys, and sometimes to occasion headach, drowsiness, giddiness, and dimness of sight. Mr. Broomfield says, that in cases in which he tried this solanum, they were much aggravated by it; and that in one case, in the dose of one grain, it proved mortal to one of his patients; therefore he thinks its use is prejudicial. It is now never given internally. It was anciently employed externally as a discutient and anodyne in some cutaneous affections, tumefactions of the glands, ulcers, and disorders of the eyes.

6. *S. nigrum rubrum*, a native of the West Indies, is called guma by the negroes. It is so far from having any deleterious quality, that it is daily served up at table as greens or spinnage. It has an agreeable bitter taste.

7. S. *tuberosum*, the common potato. See POTATO, and RURAL ECONOMY.

SOLAR, *adj.* } Fr. *solaire*; Lat. *solaris*.

SOLARY. } Being of the sun; belonging to, born under the influence of, or measured by the sun.

They denominate some herbs *solar*, and some *lunar*.  
*Bacon.*

Scripture hath been punctual in other respects, concerning *solary* miracles.

*Browne's Vulgar Errors.*

The corpuscles that make up the beams of light be *solary* effluvia, or minute particles of some ethereal substance, thrusting on one another from the lucid body.

*Boyle.*

The rule to find the moon's age, or any day of any solar month, cannot show precisely an exact account of the moon.

*Holder on Time.*

The cock was pleased to hear him speak so fair, And proud beside, as *solar* people are.

*Dryden.*

Instead of golden fruits,  
By genial showers and *solar* heat supplied,  
Unsufferable winter had defaced  
Earth's blooming charms, and made a barren waste.

*Blackmore.*

SOLD, *n. s.* Old Fr. *souldée*. Military pay. Obsolete.

But were your will her sold to entertain,  
And numbered be amongst knights of maidenhead,  
Great guerdon, well I wot, should you remain,  
And in her favour high be reckoned. *Faerie Queene.*

SOLDAN, *n. s.* Corrupted from sultan. The emperor of the Turks.

They at the *soldan's* chair defied the best.

*Milton.*

SOLDANEL, SOLDANELLA, or rindweed, in botany, a genus of plants belonging to the class of pentandria, and order of monogynia; natural order twenty-first, precia: cor. campanulated; the border being very finely cut into a great many segments: caps. unilocular, and its apex polydentate.

SOLDER, *v. a. & n. s.* Fr. *soudre*; Ital. *soldare*, of Lat. *solidare*. See SODER. To unite or fasten with any kind of metallic cement: the cement used.

It boooth them not thus to solder up a broken cause, whereof their first and last discourses will fall asunder.

*Hooker.*

Wars 'twixt you twain would be  
As if the world should cleave, and that slain men  
Should solder up the rift.

*Shakspeare. Antony and Cleopatra.*

Thou visible god,  
That solderest close impossibilities,  
And mak'st them kiss!

*Id. Timon.*

Learned he was in medicinal lore;  
For by his side a pouch he wore  
Replete with strange hermetick powder,  
That wounds nine miles point-blank would solder.

*Hudibras.*

The naked cynick's jar ne'er flames; if broken,  
'Tis quickly soldered, or a new bespoken.

*Dryden's Juvenal.*

A concave sphere of gold, filled with water, and soldered up, has, upon pressing the sphere with great force, let the water squeeze through it, and stand all over its outside in multitudes of small drops like dew, without bursting or cracking the body of the gold.

*Newton's Opticks.*

At the restoration the presbyterians, and other sects, did all unite and solder up their several schemes, to join against the church.

*Swift.*

Goldsmiths say, the coarsest stuff

Will serve for solder well enough.

*Id.*

One's hip he slashed, and split the other's shoulder,

And drove them with their brutal yells to seek

If there might be chirurgeons who could solder

The wounds they richly merited, and shriek

Their baffled rage and pain; while waxing colder

As he turned o'er each pale and gory cheek,

Don Juan raised his little captive from

The heap a moment more had made her tomb.

*Byron.*

SOLDER, SONDER, or SODER, a metallic or mineral composition used in soldering or joining together other metals. Solders are made of gold, silver, copper, tin, bismuth, and lead. In the composition there must always be some of the metal that is to be soldered mixed with some higher and finer metals. Goldsmiths formerly made four kinds of solder, viz. solder of eight, where to seven parts of silver there is one of brass or copper; solder of six, where only a sixth part is copper; solder of four, and solder of three: but one kind, or two at most, is now used. As mixtures of gold with a little copper melt with less heat than pure gold itself, these mixtures serve as solders for gold: two pieces of fine gold are soldered by gold that has a small admixture of copper; and gold alloyed with copper is soldered by such as is alloyed with more copper. A mixture of gold and copper is also a solder for fine copper as well as for fine gold. Gold, being particularly disposed to unite with iron, proves an excellent solder for the finer kinds of iron and steel instruments. The solder used by plumbers is made of two pounds of lead to one of block-tin. Its goodness is tried by melting it, and pouring the bigness of a crown-piece on a table; for, if good, there will arise little bright shining stars therein. The solder for copper is made like that of the plumbers; only with copper and tin; and for very nice works, instead of tin, they sometimes use a quantity of silver. Solder for tin is made of two-thirds of tin and one of lead, or of equal parts of each; but, where the work is any thing delicate, as in organ-pipes, where the juncture is scarcely discernible, it is made of one part of bismuth and three parts of pewter. The pewterers use a kind of solder made with two parts of tin and one of bismuth; this composition melts with the least heat of any solder. Silver solder is that which is made of two parts of silver and one of brass, and used in soldering those metals. Spelter solder is made of one part of brass and two of spelter or zinc, and is used by the braziers and coppersmiths for soldering brass, copper, and iron. Though spelter solder be much cheaper than silver solder, yet workmen in many cases prefer the latter. Mr Boyle found it to run with so moderate a heat as not to endanger the melting of the delicate parts of the work to be soldered; and, if well made, this silver solder will lie even upon the ordinary kind itself; and so fill up those little cavities that may chance to be left in the first operation. As to iron, it is sufficient that it be heated to a white heat, and the two extremities, in this state, be hammered together; by which means they become incorporated one with the other.

Solders consist merely of simple or mixed metals, by which alone metallic bodies can be firmly united with each other. In this respect it is a general rule that the solder should always be easier of fusion than the metal intended to be soldered by it; next to this care must also be taken that the solder be as far as is possible of the same color with the metal that is to be soldered. For the simple solders, each of the metals may be used, according to the nature of that which is to be soldered. For fine steel, copper, and brass work, gold and silver may be employed. In the large way, however, iron is soldered with copper, and copper and brass with tin.

The most usual solders, says Dr. Ure, are the compound, which are distinguished into two principal classes, viz. hard and soft solders. The hard solders are ductile, will bear hammering, and are commonly prepared of the same metal with that which is to be soldered, with the addition of some other, by which a greater degree of fusibility is obtained, though the addition is not always required to be itself easier of fusion. Under this head comes the hard solder for gold, which is prepared from gold and silver, or gold and copper, or gold, silver, and copper. The hard solder for silver is prepared from equal parts of silver and brass, but made easier of fusion by the admixture of a sixteenth part of zinc. The hard solder for brass is obtained from brass mixed with a sixth, or an eighth, or even one-half of zinc, which may also be used for the hard solder of copper. It is sold in the shops in a granulated form, under the name of spelter-solder.

The soft solders melt easily, but are partly brittle, and therefore cannot be hammered. Of this kind are the following mixtures:—Tin and lead in equal parts; of still easier fusion is that consisting of bismuth, tin, and lead, equal parts; one or two parts of bismuth of tin and lead, each one part.

In the operation of soldering the surfaces of the metal intended to be joined must be made very clean, and applied to each other. It is usual to secure them by a ligature of iron wire, or other similar contrivance. The solder is laid upon the joint, together with sal ammoniac or borax, or common glass, according to the degree of heat intended. These additions defend the metal from oxidation. Glaziers use resin; and pitch is sometimes employed. Tin-foil applied between the joints of fine brass work, first wetted with a strong solution of sal ammoniac, makes an excellent juncture, care being taken to avoid too much heat.

**SOLDERING**, the joining and fastening together of two pieces of the same metal, or of two different metals, by the fusion and application of some metallic composition on the extremities of the metals to be joined. To solder upon silver, brass, or iron: take silver, five pennyweights; brass, four pennyweights; melt them together for soft solder, which runs soonest. Take silver five pennyweights; copper, three pennyweights; melt them together for hard solder. Beat the solder thin, and lay it on the place to be soldered, which must be first fitted and bound together with wire as occasion requires; then take borax in powder, and temper it like pap, and lay it

upon the solder, letting it dry; then cover it with live coals, and blow, and it will run immediately; take it presently out of the fire, and it is done. If any thing is to be soldered in two places, which cannot well be done at one time, you must first solder with the harder solder, and then with the soft; for, if it be first done with the soft, it will unsolder again before the other is fastened. To prevent the solder from running about the piece that is to be soldered, rub such places over with chalk.—In the soldering either of gold, silver, copper, or either of the metals above mentioned, there is generally used borax in powder, and sometimes resin. As to iron, it is sufficient that it be heated red-hot, and the two extremities thus hammered together, by which means they will become incorporated with each other. For the finer kinds of iron and steel instruments, however, gold proves an excellent solder. This metal will dissolve twice or thrice its weight of iron in a degree of heat very far less than that in which iron itself melts; hence if a small plate of gold is wrapped round the parts to be joined, and afterwards melted by a blow pipe, it strongly unites the pieces together without any injury to the instrument, however delicate.

**SOLDIER**, *n. s.* Fr. *soldat, soldie*, from Sol'dierlike, *adj.* low Lat. *solidarius*, of Sol'dierly, *adv.* *solidus* a piece of money.

**SOLDIERSHIP**, *n. s.* the pay of a soldier. A Sol'diery.

Fighting man; a warrior. All the derivatives correspond. Originally one who served for pay. Delaney in his valuable and learned life of king David, vol. i. p. 97, observes, ‘Cæsar tells us that a usage anciently obtained among the Gauls, for those that were in debt, oppressed by tributes, or the tyranny of the great, to betake themselves to the service of some eminent man for protection; by him they were maintained, and to him they devoted themselves, under a solemn obligation to live and die with him. These were called in the Gallic language, *soldarii*; which must be owned to be a very honorable original of the word soldier.’

Although at the first they had fought with beastly fury, rather than any *soldierly* discipline, practice had now made them comparable to the best. Sidney.

Offering him, if he would exercise his courage in *soldiery*, he would commit some charge unto him under his lieutenant Philanax. Id.

A soldier,  
Full of strange oaths, and bearded like a pard,  
Jealous in honour, sudden and quick in quarrel,  
Seeking the bubble reputation  
Even in the cannon's mouth. Shakespeare.

I will maintain the word with my sword to be a *soldierlike* word, and a word of good command. Id. Henry IV.

Thy father and myself in friendship  
First tried our *soldiership*: he did look far  
Into the service of the time, and was  
Discipled of the bravest.

Id. All's Well that Ends Well.

They, according to a *soldierly* custom, in cases of extremity, by interchange of a kiss by every one of them upon the swords of others, sealed a resolution to maintain the place. Hayward.

A hateful service, that dissolved the knees  
Of many a *soldier*. Chapman.

Enemies, as well as friends, confessed that it was as *soldierly* an action as had been performed on either side.      *Clarendon.*

I have not yet forgot I am a king :  
If I have wronged thee charge me face to face ;  
I have not yet forgot I am a soldier.

*Dryden's Don Sebastian.*

The Memphian *soldiery*,  
That swelled the Erythrean wave, when walled  
The unfroze waters marvellously stood.      *Philipps.*

I charge not the *soldiery* with ignorance and contempt of learning, without allowing exceptions.      *Swift.*

I've served my king and country lang—  
Take pity on a *sodger*.      *Burns.*

SOLDIERS, in English law. The laws and constitution of these kingdoms know no such state as that of a perpetual standing soldier, bred up to no other profession than that of war: it was not till the reign of Henry VII. that the kings of England had so much as a guard about their persons. In the time of our Saxon ancestors, as appears from Edward the Confessor's laws, the military force of the kingdom was in the hands of the dukes or heretarchs, who were constituted through every province and county in the kingdom; being taken out of the principal nobility, and such as were most remarkable for being 'sapientes, fideles, et animosi.' Their duty was to lead and regulate the English armies, and because of this great power they were elected by the people in their full assembly, or folkmote, in the same manner as the sheriffs.

Upon the Norman conquest the feudal law, the whole of which is built on military tenures, was introduced in all its rigor. It is not necessary here to enter into the particulars of that constitution; it is sufficient to observe that, in consequence, all the lands in the kingdom were divided into what were called knight's fees, in number above 60,000; and, for every knight's fee, a knight or soldier (miles) was bound to attend the king in his wars for forty days in a year; in which space of time, before war was reduced to science, the campaign was generally finished, and the kingdom either conquered or victorious. By this means the king had, without any expense, an army of 60,000 men always ready at his command. This personal service, however, as early as the reign of Henry II., degenerated into pecuniary commutations or aids; and at length all military tenures were entirely abolished by stat. 12 Car. II. c. 24, and other measures were pursued for the internal defence of the kingdom; which terminated in the establishment of the militia.

But frequently wars rendered more veteran troops and more regular discipline necessary. Therefore at such times more rigorous methods were put in use for the raising of armies, and the due regulation and discipline of the soldiery; which are to be looked upon only as temporary excrescences arising out of the distemper of the state, and not as any part of the permanent and perpetual laws. Martial law has been said to be, in truth and reality, no law, but something indulged rather than allowed as a law. The petition of right, 3 Car. I., enacted that no soldier shall be quartered on the subject without his own consent; and that no commission should

issue to proceed within this land according to martial law. After the restoration king Charles II. kept up about 5000 regular troops, by his own authority, for guards and garrisons; which king James II. having by degrees increased to no less than 30,000, all paid from his own civil list; it was made one of the articles of the Bill of Rights that the raising or keeping a standing army within the kingdom in time of peace, unless it be with consent of parliament, is against law. Stat. 1 W. & M. stat. 2, c. 2.

But, as standing armies have of late years universally prevailed in Europe, it has been annually judged necessary by our legislature to maintain, even in time of peace, a standing body of troops; who are, however, ipso facto disbanded at the expiration of every year, unless continued by parliament. On an occasion within our memory the Annual Bill did not receive the royal assent in due time, on a given Saturday night; and the whole army was virtually disbanded, or held illegally together until the Monday morning.

To keep this body of troops in order an act of parliament passes 'to punish mutiny and desertion, and for the better payment of the army and their quarters.' This regulates the manner in which they are to be dispersed among the several innkeepers and victuallers throughout the kingdom; and establishes a law martial for their government. By this, among other things, it is enacted, that if any officer or soldier shall excite or join any mutiny, or, knowing of it, shall not give notice to the commanding officer; or shall desert, or list in any other regiment, or sleep upon his post, or leave it before he is relieved, or hold correspondence with a rebel or enemy, or strike or use violence to his superior officer, or shall disobey his lawful commands: such offender shall suffer such punishment as a court-martial shall inflict, though it extend to death itself.

By our statute laws (still remaining in force though not attended to), desertion in time of war is made felony, without benefit of clergy, and the offence is triable by a jury, and before justices at the common law; yet, by our militia laws, a much lighter punishment is inflicted for desertion in time of peace. But our mutiny act makes no such distinction: for any of the faults above-mentioned are equally at all times punishable with death itself, if a court-martial shall think proper. This discretionary power of the court-martial is indeed to be guided by the directions of the crown; which, with regard to military offences, has almost an absolute legislative power.

'His majesty,' says the act, 'may form articles of war, and constitute courts-martial, with power to try any crime by such articles, and inflict penalties by sentence or judgment of the same.' But as soldiers, by this annual act, are in some respects put in a worse condition than any other subjects; so, by the humanity of our standing laws, they are in other cases put in a much better. By stat. 43 Eliz. c. 3, a weekly allowance is to be raised in every county, for the relief of soldiers that are sick, hurt, and maimed; and the royal hospital at Chelsea is established for such as are worn out in their duty. Officers and soldiers that have been in the king's service are, by several statutes enacted at the close, or during

the continuance of wars, at liberty to use any trade or occupation they are fit for in any town in the kingdom (except the two universities), notwithstanding any statute, custom, or charter, to the contrary. And soldiers in actual military service may make nuncupative wills, and dispose of their goods, wages, and other personal chattels, without those forms, solemnities, and expenses, which the law requires in other cases.—Stats. 29 Car. II. c. 3; 5 W. 3, c. 21, § 6. See title *WILLS*.

By 46 Geo. III. c. 60, for making better provision for soldiers, it is declared that soldiers shall, in consequence of their service for a certain number of years, be entitled to such pensions as shall be fixed in the regulations ordered by his majesty, in force at the time of their enlistment. These pensions are under the management of the commissioners of Chelsea Hospital: and are, under their direction, payable throughout the country by the receiver-general of the land-tax, &c. During war foreign soldiers have been occasionally admitted into the British service, and in such cases commissions have been allowed to be granted by his majesty to foreign officers.—See the acts 45 Geo. III. c. 75; 46 Geo. III. c. 23.

By the annual mutiny acts no soldier shall be taken out of the service by any process, except it be for some criminal matter, or for a real debt amounting to £20, of which affidavit is to be made; and, if any soldier be otherwise arrested, one judge by a warrant under his hand and seal shall discharge him: but the plaintiff may file an appearance in an action of debt, upon notice thereof given, and proceed to judgment and execution, other than against the body of such soldier. Soldiers, while confined for debt, shall not receive pay.

The following statutes seem in force, though in a great measure, if not entirely, superseded by the provisions of the mutiny-act, and other acts before alluded to. The stat. 7 Hen. VII. c. 1, enacts, that if a captain shall not have the whole number of his soldiers, or not pay them their due wages within six days after he has received it, he shall forfeit all his goods and chattels, and suffer imprisonment. The stat. 3 Jac. I. c. 4, § 18, ordains, that if any person goes beyond sea, to serve any foreign prince as a soldier, and he does not take the oath of allegiance before he goes, it is felony; and, if he is a gentleman or officer that is going to serve a foreign prince, he is to be bound with two sureties not to be reconciled to the see of Rome, &c., or it will be felony. And see stat. 9 Geo. 2, c. 30, repealed by 59 Geo. III. c. 69. By stat. 31 Car. II. c. 1, no soldier shall be quartered on any persons without their consent; and inhabitants of places may refuse to quarter any soldier, notwithstanding any order whatsoever.

**SOLE**, *n. s. & v. a.* Lat. *solum*; Ital. *suola*. The foot itself; the bottom of the foot; the bottom of any thing: a kind of fish: to furnish with soles.

To redeem thy woeful parent's head  
From tyrant's rage and ever-dying dread,  
Hast wandered through the world now long a day,  
Yet ceasest not thy weary soles to lead. *Faerie Queene*.

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I will only be bold with Benedict for his company; for from the crown of his head to the sole of his foot he is all mirth.

*Shakspeare. Much Ado About Nothing.*

Nay, gentle Romeo, we must have you dance.

—Not I, believe me: you have dancing shoes,

With nimble soles. *Shakspeare.*

Tickling is most in the soles of the feet: the cause is, the rareness of being touched there.

*Bacon's Natural History.*

Of flat fish, rays, thornbacks, soles, and flounders.

*Carew.*

Such resting found the sole of unblest feet. *Milton.*

In the make of the camel's foot, the sole is flat and broad, being very fleshy, and covered only with a thick, soft, and somewhat callous skin, fit to travel in sandy places.

*Ray*

Elm is proper for mills, soles of wheels, and pipes.

*Mortimer.*

The strike-block is a plane shorter than the jointer, having its sole made exactly flat and straight, and is used for the shooting of a short joint.

*Malton's Mechanical Exercises.*

His feet were soled with a treble tuft of a close short tawny down. *Grew's Museum.*

The caliga was a military shoe, with a very thick sole, tied above the instep with leather thongs.

*Arbuthnot on Coins.*

**SOLE**, *adj.* { Old. Fr. *sol*; Lat. *solus*. Sin-

**SOLELY**, *adv.* { gle; only: the adverb corresponding.

Take not upon thee to be judge alone: there is no sole judge but, only one: say not to others, Receive my sentence, when their authority is above mine.

*Hooker.*

Left solely heir to all his lands.

*Shakspeare. Taming of the Shrew.*

Orpheus every where expressed the infinite and sole power of one God, though he used the name of Jupiter.

*Raleigh.*

To me shall be the glory sole among The' infernal powers. *Milton's Paradise Lost.*

I, when no other durst, sole undertook

The dismal expedition to find out

And ruined Adam, and the exploit performed

Successfully. *Milton.*

That the intemperate heat of the clime solely occasions this complexion, experience admits not.

*Browne's Vulgar Errours.*

A rattling tempest through the branches went, That stripped them bare, and one sole way they rent.

*Dryden.*

He, sole in power, at the beginning said, Let sea, and air, and earth, and heaven be made; And it was so: and, when he shall ordain In other sort, has but to speak again, And they shall be no more.

*Prior.*

Some others are such as a man cannot make his wife, though he himself be sole and unmarried.

*Ayliffe.*

This truth is pointed chiefly, if not solely, upon sinners of the first rate, who have cast off all regard for piety.

*Atterbury.*

They all chose rather to rest the cause solely on logical disputation, than upon the testimonies of the ancients.

*Waterland.*

Our senses, our appetites, and our passions, are our lawful and faithful guides, in most things that relate solely to this life; and, therefore, by the hourly necessity of consulting them, we gradually sink into an implicit submission, and habitual confidence.

*Johnson.*

**SOLE**, in ichthyology. See *PLEURONECTES*.

**SOLE**, in the manege, a sort of horn under a

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horse's foot, which is much more tender than the other horn that encompasses the foot, and by reason of its hardness is properly called the horn or hoof.

**SOLE** (Anthony Maria Dal), an eminent landscape painter, born at Bologna in 1597. His situations were beautiful and well chosen, his distances pleasing, the perspective receding of his objects is conducted with great judgment, and his coloring is bold and lively. He died in 1677, aged eighty.

**SOLE** (Joseph Dal), the son of Anthony Maria, was born in 1654. He studied under his father and other masters, and became very eminent in landscape and history painting. One of his best pieces is the death of king Priam. He died in 1719, aged sixty-five.

**SOLECISM**, *n. s.* Gr. σολοκυσμός. Strictly unfitness of one word to another; impropriety in language: it is now commonly used for inconsistency of one thought, or assigned reason, with another.

There is scarce a *solecism* in writing which the best author is not guilty of, if we be at liberty to read him in the words of some manuscript. *Addison.*

A **SOLECISM**, in grammar, is a false manner of speaking, contrary to the rules of grammar, either in respect of declension, conjugation, or syntax. The word is derived from the Soli, a people of Attica, who, being transplanted to Cyprus or Cilicia, lost the purity of their ancient tongue, and became ridiculous to the Athenians for the improprieties into which they fell.

<b>SOLEMIN</b> , <i>adj.</i> <b>SOLEMNNESS</b> , <i>n. s.</i> <b>SOLEMNITY</b> , <b>SOLEMNISATION</b> , <b>SOLEMNISE</b> , <i>v. a.</i> <b>SOLEMNLY</b> , <i>adv.</i>	Fr. <i>solemnel</i> ; Lat. <i>solemnis</i> . Anniversary; observed once a year with ceremonies; grave; awful; serious: the adverb and noun substantive corresponding: to solemnise is to celebrate; perform annually with religious rites: solemnisation, the act of doing so.
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Dorilaus in a great battle was deprived of life; his obsequies being no more solemnized by the tears of his partakers than the blood of his enemies. *Sidney.*

With much more skilful cruelty, and horrible solemnity, he caused each thing to be prepared for his triumph of tyranny. *Id.*

Then gan they sprinkle all the parts with wine, And make great feast to solemnize that day. *Faerie Queene.*

Then gan he loudly through the house to call, But no one care to answer to his cry; There reigned a solemn silence over all. *Id.*

Baptism to be administered in one place, and marriage solemnized in another. *Hooker.*

The lady Constance,

Some speedy messenger bid repair To our solemnity. *Shakspeare. King John.*

Pr'ythee, Virgilia, turn thy solemnness out o' door, And go along with us. *Id. Coriolanus.*

Let him land

And solemnly see him set on to London. *Id. Henry V.*

There may be greater danger in using such compositions in churches, at arraignments, plays, and solemnities. *Bacon.*

Soon followed the solemnization of the marriage between Charles and Anne dutchess of Bretagne, with whom he received the dutchy of Bretagne.

*Id. Henry VII.*

There are, in points of wisdom and sufficiency, that do nothing or little very solemnly. *Id. Essays.*

A diligent decency was in Polycletus above others; to whom, though the highest praise be attributed by the most, yet some think he wanted solemnity.

*Wotton's Architecture.*

His holy rites and solemn feasts profaned. *Milton.*  
Nor then the solemn nightingales ceased warbling. *Id.*

Their choice nobility and flower  
Met from all parts to solemnize this feast. *Id. Agonistes.*

The necessary business of a man's calling, with some, will not afford much time for set and solemn prayer. *Duty of Man.*

The multitude of the celestial host were heard to solemnize his miraculous birth. *Boyle's Seraphic Love.*

The worship of this image was advanced, and a solemn supplication observed every year. *Stillingfleet.*

What funeral pomp shall floating Tiber see,  
When rising from his bed he views the sad solemnity! *Dryden.*

The ministers of state, who gave us law,  
In corners, with selected friends, withdraw;  
There in deaf murmurs solemnly are wise,  
Whispering like winds ere hurricanes arise. *Id.*

Though the days of solemnity, which are but few, must quickly finish that outward exercise of devotion which appertains to such times; yet they increase men's inward dispositions to virtue for the present; and, by their frequent returns, bring the same at length to perfection. *Nelson.*

The stateliness and gravity of the Spaniards shews itself in the solemnity of their language. *Addison's Spectator.*

Though the forms and solemnities of the last judgment may bear some resemblance to those we are acquainted with here, yet the rule of proceeding shall be very different. *Atterbury.*

Great was the cause; our old solemnities From no blind zeal or fond tradition rise; But, saved from death, our Argives yearly pay These grateful honours to the god of day. *Pope.*

When Steele reflects upon the many solemn strong barriers to our succession, of laws and oaths, he thinks all fear vanisheth: so do I, provided the epithet *solemn* goes for nothing; because, though I have heard of a *solemn* day, and a *solemn* coxcomb, yet I can conceive no idea of a *solemn* barrier. *Swift.*

To demonstrate how much men are blinded by their own partiality, I do solemnly assure the reader that he is the only person from whom I ever heard that objection. *Id.*

Be this truth eternal ne'er forgot,  
*Solemnity's* a cover for a sot. *Young.*

This speech ended with a solemnity of accent. *Female Quixote.*

**SOLEMN** implies something performed with much pomp, ceremony, and expense.

**SOLEMN**, in law, signifies something authentic, or what is clothed in all its formalities.

The **SOLEMN LEAGUE AND COVENANT** was established in the year 1643, and formed a bond of union between Scotland and England. See ENGLAND. It was sworn and subscribed by many in both nations; who thereby solemnly abjured popery and prelacy, and combined together for their mutual defence. It was approved by the parliament and assembly at Westminster, and ratified by the general assembly of Scotland in 1645. King Charles II. disapproved of it when he surrendered himself to the Scottish army in 1646; but in 1650 he declared his

approbation both of this and the national covenant by a solemn oath ; and in August of the same year made a farther declaration at Dunfermline to the same purpose, which was also renewed on occasion of his coronation at Scone in 1651. The covenant was ratified by parliament in this year, and the subscription of it required by every member, without which the constitution of the parliament was declared null and void. It produced a series of distractions in the subsequent history of that country, and was voted illegal by parliament, and provision made against it.—Stat. 14. Car. II. c. 4.

SOLEN, in zoology, the spout-fish, razor-sheath, or knife-handle shell ; a genus belonging to the class of vermes, and order of testacea. The animal is an ascidia. The shell is bivalve, oblong, and opening at both sides : the hinge has a tooth shaped like an awl, bent back, often double, not inserted into the opposite shell ; the rim at the sides somewhat worn away, and has a horny cartilaginous hinge. There are twenty-three species. Of these, three, viz.

1. *S. ensis*, 2. *S. silqua*, 3. *S. vagina*, are found on the British coasts, and lurk in the sand near the low-water mark in a perpendicular direction. When in want of food they elevate one end a little above the surface, and protrude their bodies far out of the shell. On the approach of danger they dart deep into the sand, sometimes two feet. Their place is known by a small dimple on the surface. Sometimes they are dug out with a shovel ; at other times they are taken by striking a barbed dart suddenly into them. When the sea is down, these fish usually run deep into the sand ; and, to bring them up, the common custom is to throw a little salt into the holes, on which the fish raises itself, and in a few minutes appears at the mouth of its hole. When half the shell is discovered, the fisherman has nothing more to do than to take hold of it with his fingers, and draw it out ; but he must be cautious not to lose the occasion, for the creature does not continue a moment in that state ; and if by any means the fisherman has touched it, and let it slip away, it is gone for ever ; for it will not be decoyed again out of its hole by salt ; so that there is then no way of getting it but by digging under it, and throwing it up with the sand. The fish has two pipes, each composed of four or five rings or portions of a hollow cylinder, of unequal lengths, joined one to another ; and the places where they join are marked by a number of fine streaks or rays. Now the reason why the salt makes these creatures come up out of their holes is, that it gives them violent pain, and even corrodes these pipes. This is somewhat strange, as the creature is nourished by means of salt water ; but it is very evident that if a little salt be strewed upon these pipes, in a fish taken out of its habitation, it will corrode the joinings of the rings, and often make one or more joints drop off : the creature, to avoid this mischief, arises out of its hole and throws off the salt, and then retires back again. The use of these pipes to the animal is the same with that of many other pipes of a like kind in other shell-fish ; they all serve to take in water ; they are only a continuation of the outer membrane of

the fish, and serve indifferently for taking in and throwing out the water, one receiving, and the other discharging it, and either answering equally well to their purpose. See MOTION. This fish was used as food by the ancients ; and Athenaeus, from Sophron, speaks of it as a great delicacy, and particularly grateful to widows. It is often used as food at present, and is brought up to table fried with eggs.

SOLEURE, a canton of Switzerland, lying chiefly between the river Aar and the Jura mountains. Its shape is irregular, and its extent about 275 square miles ; the Jura mountains here rise to the height of 3000 or 4000 feet above the level of the sea. The rest of the canton is level and fertile. The inhabitants well understand the art of irrigating, and their cattle are reckoned the best in Switzerland. The manufactures embrace, on a small scale, the spinning and weaving of woollen, linen, and cotton. The only places deserving the name of towns are Soleure and Olten. In religion this canton is almost wholly Catholic. The constitution is aristocratical ; the criminal code nearly the same as in France ; but great part of the decisions are regulated by local usages. Population 50,000.

SOLEURE, or SOLOTHURN, the capital of the above canton, stands at the foot of Mount Jura, on both sides of the Aar. It is fortified with walls and bastions, and, though built in bad taste, has several good edifices, such as the hotel de ville, the mint, the public library, Jesuits' church, and that of St. Urse, considered one of the best churches in Switzerland. Several Roman antiquities have also been found here. The trade of the place is limited ; and consists partly in the manufacture of cotton and stuffs, and partly in the transit business between Bale and Italy. The environs are pleasant. Population 4200. Eighteen miles north by east of Bern, and twenty-six south of Bale.

SOLFAING, in music, the naming or pronouncing the several notes of a song by the syllables *ut, re, mi, fa, sol, &c.*, in learning to sing it. Of the seven notes in the French scale *ut, re, mi, fa, sol, la, si*, only four are used among us in singing, as *mi, fa, sol, la* ; their office is principally in singing, that by applying them to every note of the scale, it may not only be pronounced with more ease, but chiefly that by them the tones and semitones of the natural scale may be better marked out and distinguished. This design is obtained by four syllables *fa, sol, la, mi*. Thus from *fa* to *sol* is a tone, also from *sol* to *la*, and from *la* to *mi*, without distinguishing the greater or less tone ; but from *la* to *fa*, also from *mi* to *fa*, is only a semitone. If then these be applied in this order, *fa, sol, la, fa, sol, la, mi, fa, &c.*, they express the natural series from C ; and, if that be repeated to a second or third octave, we see by them how to express all the different orders of tones and semitones in the diatonic scale ; and still above *mi* will stand *fa, sol, la*, and below it the same inverted *la, sol, fa*, and one *mi* is always distant from another an octave ; which cannot be said of any of the rest, because after *mi* ascending come always *fa, sol, la*, which are repeated invertedly descending. The first thing in learning to sing is to make one raise

a scale of notes by tones and semitones to an octave, and descend again by the same; and then to rise and fall by greater intervals at a leap, as thirds and fourths, &c., and to do all this by beginning at notes of different pitch. Then those notes are represented by lines and spaces, to which these syllables are applied, and the learners taught to name each line and space thereby, which makes what we call solfæting; the use whereof is, that while they are learning to tune the degrees and intervals of sound expressed by notes on a line or space, or learning a song to which no words are applied, they may not only do it the better by means of articulate sounds, but chiefly that by knowing the degrees and intervals expressed by those syllables, they may more readily know the places of the semitones, and the true distance of the notes. See SINGING.

Though this system was not fully developed in the writings of Guido, to whom the invention of the gammut and harmonical hand has been commonly ascribed; yet Dr. Burney observes that writers very near the period in which he lived give him the honor of its discovery; and particularly Siegeber, a monk of Gembloers, in the diocese of Namur, in Brabant, in his Chronicle under the year 1028. Cotton also, who lived about a century after Guido, says that solmisation by the six syllables, *ut, re, mi, fa, &c.*, was practised by the English, French, and Germans; but the Italians, he adds, made use of other syllables; and by a passage from the Chronicle of Tours, under the year 1033, cited by Carpenter, in his Supplement to the Latin Glossary of Du Cange, article Gamma, Guido is put in full possession of the scale and solmisation. About the end of the seventeenth century, the additional syllable *si* was universally received in France for the seventh of the key of C. The earliest English writer, mentioned by Dr. Burney, who takes notice of the omission of *ut* and *re* in solmisation, is Mr. Charles Butler, in his Principles of Music, published in 1636, and after his time the *ut* and *re* were rejected by all the English singing-masters; Dr. Holder, Dr. Wallis, and every writer on music in this kingdom, were unanimous in excommunicating these two syllables till Dr. Pepusch endeavoured, not unsuccessfully, to have them restored.

SOLFATARA, or Lago di Bagni, a small lake in the Campagna di Roma, Italy, near Tivoli, formerly the Lacus Albulus. It is remarkable for containing several floating islets, formed of matted sedge and herbage, with a soil of dust and sand blown from the adjacent country, and cemented by the bitumen and sulphur of the water. Some of these islets are fifteen yards long, and will bear five or six people, who, by means of a pole, move to different parts of the lake. From the water issues a whitish stream, which emits a sulphureous vapor, until it reaches the small river Teverone. The water of this rivulet has a pe-trifying quality, which seems to increase in strength the farther it has flowed from the lake. Fish are found in the Teverone, till it receives the waters of the lake.

SOLFATARA, a mountain in the Terra di Lavoro, Naples. It has a kind of cavity, about a mile in diameter, the crater, doubtless, of a vol-

cano now extinct. The mountains around are of a crescent form. The soil is warm and white, and, if opened to some depth, is insupportable from the heat. The ground being in many parts hollow, it is supposed that there may be a subterraneous communication with Vesuvius. It furnishes sulphur, vitriol, and alum.

SOLI, or SOLOE, in ancient geography, a town of Cyprus built on the borders of the Clarius, by a colony from Athens. It was first called *Aepeia*, till Solon visited the island, and advised its prince Philocyprus to change the situation of his capital. Accordingly a new town was built, in a fine plain, and named Soli or Soloe, after Solon.—Strabo, 14. Plut.

SOLI, or SOLOE, a town of Silesia, on the sea coast, built by a colony of Greeks and Rhodians; afterwards called Pompeiopolis, from Pompey the Great, who settled a colony of pirates in it.—Plin. v. 27.

SOLI, the inhabitants of both the above towns, one or other, or both of whom, forgetting the purity of their original language, gave rise to the term Solecism.

SOLICIT <sup>T</sup> , <i>v. a.</i>	Lat. <i>solicito</i> . To im-
SOLICIT <sup>A</sup> TION, <i>n. s.</i>	portune; entreat; ex-
SOLICITOR,	cite; awake to action;
SOLICITOUS, <i>adj.</i>	disturb (a Latinism): so-
SOLICITOUSLY, <i>adv.</i>	licitation is the act of
SOLICITUDE, <i>n. s.</i>	soliciting: solicitor, he
SOLICITRESS.	who petitions (strictly)

for another: hence the legal attorney of the court of Chancery, the adjective and two noun substantives following correspond with the verb.

With that she wept again; till he again soliciting the conclusion of her story, Then must you, said she, know the story of Amphialus? Sidney.

We heartily solicit  
Your gracious self to take on you the charge  
And kingly government of this your land.

Shakspeare. Richard III.

This supernatural soliciting  
Cannot be ill, cannot be good. Id. Macbeth.

Be merry, Cassio;  
For thy solicitor shall rather die

Than give thy cause away. Id. Othello.

In this, by comparison, we behold the many cares and great labours of worldly men, their solicitude, and outward shews, and publick ostentation, their pride and vanities. Raleigh.

For the king's attorney and solicitor general, their continual use for the king's service requires men every way fit. Bacon.

He would surely have as solicitously promoted their learning as ever he obstructed it. Decay of Piety.

Our hearts are pure, when we are not solicitous of the opinion and censures of men, but only that we do our duty. Taylor.

Enjoy the present, whatsoever it be, and be not solicitous for the future. Taylor's Holy Living.

The colonel had been intent upon other things, and not enough solicitous to finish the fortifications. Clarendon.

Laud attended on his majesty, which he would have been excused from, if that design had not been in view, to accomplish which he was solicitous for his advice. Id.

Did I request thee, Maker! from my clay  
To mold me man? Did I solicit thee  
From darkness to promote me?  
Milton's Paradise Lost.  
Solicit not thy thoughts with matters hid. Milton.

I can produce a man  
Of female seed, far abler to resist  
All his *solicitations*, and at length  
All his vast force, and drive him back to hell. *Id.*

Without sign of boast, or sign of joy,  
*Solicitous* and blank, he thus began.

*Id. Paradise Regained.*

The medical art being conversant about the health  
and life of man, doctrinal errors in it are to be *solicitously* avoided. *Boyle.*

If they would but provide for eternity with the  
same *solicitude*, and real care, as they do for this life,  
they could not fail of heaven. *Tillotson.*

The guardian of my faith so false did prove,  
As to *solicit* me with lawless love. *Dryden's Aurora.*

You have not only been careful of my fortune, the  
effect of your nobleness; but you have been *solicitous*  
of my reputation, which is that of your kindness. *Dryden.*

I had the most earnest *solicitress*, as well as the  
fairest; and nothing could be refused to my lady  
Hyde. *Id.*

Sounds and some tangible qualities *solicit* their  
proper senses, and force an entrance to the mind. *Loeke.*

Children are surrounded with new things, which,  
by a constant *solicitation* of their senses, draw the  
mind constantly to them. *Id.*

They are to be known by a wonderful *solicitude* for  
the reputation of their friends. *Tatler.*

No man is *solicitous* about the event of that which  
he has in his power to dispose of. *South.*

Honest minds will consider poverty as a recom-  
mendation in the person who applies himself to them;  
and make the justice of his cause the most powerful  
*solicitor* in his behalf. *Addison.*

The tender dame, *solicitous* to know  
Whether her child should reach old age or no,

Consults the sage Tiresias. *Id.*

He is *solicited* by popular custom to indulge him-  
self in forbidden liberties. *Rogers's Sermons.*

I view my crime, but kindle at the view;  
Repent old pleasures, and *solicit* new. *Pope.*

How lawful and praiseworthy is the care of a  
family! And yet how certainly are many people  
rendered incapable of all virtue, by a worldly *solicitous*  
temper! *Law.*

**SOLICITOR GENERAL**, a great officer of the  
law, next to the attorney general, who holds his  
office by patent during the king's pleasure, has  
the care and concern for managing the king's af-  
fairs, and has fees for pleading, besides other  
fees arising by patents, &c. He attends on the  
privy council; and the attorney general and he  
were anciently reckoned among the officers of  
the exchequer; they have their audience, and  
come within the bar in all other courts.

**SOLID**, *adj. & n.s.* Fr. *solide*; Lat. *solidus*.

**SOLIDITY**, *n.s.* Substantial; not liquid

**SOLIDLY**, *adv.* or fluid; strong; firm:

**SOLIDNESS**, *n.s.* hence real; not weak or

imaginary: the derivatives all corresponding.

It beareth misseltoe: the cause may be the close-  
ness and *solidness* of the wood and pith of the oak.

*Bacon.*

This might satisfy sober and wise men, not with  
soft and specious words, but with pregnant and *solid*  
reasons. *King Charles.*

Either not define at all, or seek out other *solder*  
methods, and more catholick grounds of defining.

*Hammond.*

A complete brave man ought to know *solidly* the  
main end he is in the world for. *Dibby.*

It is built with that unusual *solidness*, that it seems  
he intended to make a sacrifice to perpetuity, and to  
contest with the iron teeth of time. *Howel.*

Thin airy things extend themselves in place,  
Things *solid* take up but little space. *Cowley.*

Land that ever burned

With *solid*, as the lake with liquid fire. *Milton.*

These, wanting wit, affect gravity, and go by the  
name of *solid* men; and a *solid* man is, in plain Eng-  
lish, a *solid* solemn fool. *Dryden.*

That which hinders the approach of two bodies,  
when they are moving one towards another, I call  
*solidity*. *Locke.*

I look upon this as a sufficient ground for any  
rational man to take up his religion upon, and which  
I defy the subtlest atheist in the world *solidly* to  
answer; namely, that it is good to be sure. *South.*

The duke's new palace is a noble pile, built after  
this manner, which makes it look very *solid* and ma-  
jestic. *Addison.*

The most known rules are placed in so beautiful  
a light that they have all the graces of novelty; and  
make the reader, who was before acquainted with  
them, still more convinced of their truth and *solidity*. *Id. Spectator.*

His fellow-peers have attended to his eloquence, and  
have been convinced by the *solidity* of his reasoning.  
*Prior.*

The stone itself, whether naked or invested with  
earth, is not by its *solidity* secured, but washed down.  
*Woodward.*

In a *solid* foot are 1728 *solid* inches, weighing 76  
pounds of rain water. *Arbuthnot on Coins.*

The first and most simple *solids* of our body are  
perhaps merely terrestrial, and incapable of any  
change or disease. *Arbuthnot.*

This pretence has a great deal more of art than of  
*solidity* in it. *Waterland.*

If persons devote themselves to science, they  
should be well assured of a *solid* and strong constitu-  
tion of body to bear the fatigues. *Watts on the Mind.*

A **SOLID**, in philosophy, is a body whose parts  
are so firmly connected together, as not easily to  
give way or slip from each other; in which  
sense solid stands opposed to fluid. Geometri-  
cians define a solid to be the third species of  
magnitude, or that which has three dimensions,  
viz. length, breadth, and thickness or depth.  
Solids are commonly divided into regular and  
irregular. The regular solids are those terminated  
by regular and equal planes, and are only five;  
viz. the tetrahedron which consists of four equal  
triangles; the cube or hexahedron, of six equal  
squares; the octahedron, of eight equal triangles;  
the dodecahedron, of twelve; and the icosahed-  
ron, of twenty equal triangles. The irregular  
solids are almost infinite, comprehending all  
such as do not come under the definition of re-  
gular solids; as the sphere, cylinder, cone, par-  
allelogram, prism, parallelopiped, &c.

A **SOLID ANGLE** is that formed by three or  
more plane angles meeting in a point; like an  
angle of a die, or the point of a diamond well  
cut. Or more generally it may be defined the  
angular space included between several plane  
surfaces, or one or more curved surfaces, meet-  
ing in the point which forms the summit of the  
angle.

Solid angles bear just the same relation to the  
surfaces which comprise them as plane angles

## S O L I D A N G L E.

do to the lines by which they are included: so that, as in the latter, it is not the magnitude of the lines, but their mutual inclination, which determines the angle; just so in the former it is not the magnitude of the planes, but their mutual inclinations which determine the angles. And hence all those geometers, from the time of Euclid down to the present period, who have confined their attention principally to the magnitude of the plane angles, instead of their relative positions, have never been able to develope the properties of this class of geometrical quantities; but have affirmed that no solid angle can be said to be the half or the double of another, and have spoken of the bisection and trisection of solid angles, even in the simplest cases, as impossible problems.

But all this supposed difficulty vanishes, and the doctrine of solid angles becomes simple, satisfactory, and universal in its application, by assuming spherical surfaces for their measure; just as circular arcs are assumed for the measures of plane angles. Imagine that from the summit of a solid angle (formed by the meeting of three planes) as a centre, any sphere be described, and that those planes are produced till they cut the surface of the sphere; then will the surface of the spherical triangle, included between those planes, be a proper measure of the solid angle made by the planes at their common point of meeting; for no change can be conceived in the relative position of those planes, that is, in the magnitude of the solid angle, without a corresponding and proportional mutation in the surface of the spherical triangle. If, in like manner, the three or more surfaces, which by their meeting constitute another solid angle, be produced till they cut the surface of the same or an equal sphere, whose centre coincides with the summit of the angle; the surface of the spheric triangle or polygon, included between the planes which determine the angle, will be a correct measure of that angle. And the ratio which subsists between the areas of the spheric triangles, polygons, or other surfaces thus formed, will be accurately the ratio which subsists between the solid angles, constituted by the meeting of the several planes or surfaces, at the centre of the sphere.

It may be proper to anticipate here the only objection which can be made to this assumption; which is founded on the principle that quantities should always be measured by quantities of the same kind. But this, often and positively as it is affirmed, is by no means necessary; nor in many cases is it possible. To measure is to compare mathematically: and if by comparing two quantities, whose ratio we know or can ascertain, with two other quantities whose ratio we wish to know, the point in question becomes determined; it signifies not at all whether the magnitudes which constitute one ratio are like or unlike the magnitudes which constitute the other ratio. It is thus that mathematicians, with perfect safety and correctness, make use of space as a measure of velocity, mass as a measure of inertia, mass and velocity conjointly as a measure of force, space as a measure of time, weight as a

measure of density, expansion as a measure of heat, a certain function of planetary velocity as a measure of distance from the central body, arcs of the same circle as measures of plane angles; and it is in conformity with this general procedure that we adopt surfaces of the same sphere as measures of solid angles.

Hence the comparison of solid angles becomes a matter of great ease and simplicity; for, since the areas of spherical triangles are measured by the excess of the sum of their angles each above two right angles, and the areas of spherical polygons of  $n$  sides, by the excess of the sum of their angles above  $2n-4$  right angles, it follows that the magnitude of a trilateral solid angle will be measured by the excess of the sum of the three angles, made respectively by its bounding planes, above two right angles; and the magnitudes of solid angles formed by  $n$  bounding planes, by the excess of the sum of the angles of inclination of the several planes above  $2n-4$  right angles.

As to solid angles limited by curve surfaces, such as the angles at the vertices of cones, they will manifestly be measured by the spheric surfaces cut off by the prolongation of their bounding surfaces, in the same manner as angles determined by planes are measured by the triangles or polygons they mark out upon the same or an equal sphere. In all cases the maximum limit of solid angles will be the plane towards which the various planes, determining such angles, approach, as they diverge farther from each other about the same summit; just as a right line is the maximum limit of plane angles, being formed by the two bounding lines when they make an angle of  $180^\circ$ . The maximum limit of solid angles is measured by the surface of a hemisphere, in like manner as the maximum limit of plane angles is measured by the arc of a semicircle. The solid right angle (either angle, for example, of a cube) is  $\frac{1}{4}$  ( $= \frac{1}{2}^{\text{d}}$ ) of the maximum solid angle; while the plane right angle is half the maximum plane angle.

The analogy between plane and solid angles being thus traced, we may proceed to exemplify this theory by a few instances; assuming 1000 as the numeral measure of the maximum solid angle  $= 4$  times  $90^\circ$  solid  $= 360^\circ$  solid.

1. The solid angles of right prisms are compared with great facility. For, of the three angles made by the three planes which by their meeting constitute every such solid angle, two are right angles; and the third is the same as the corresponding plane angle of the polygonal base; on which, therefore, the measure of the solid angle depends. Thus, with respect to the right prism with an equilateral triangular base, each solid angle is formed by planes which respectively make angles of  $90^\circ$ ,  $90^\circ$ , and  $60^\circ$ . Consequently  $90^\circ + 90^\circ + 60^\circ + 180^\circ = 360^\circ$ , is the measure of such angle, compared with  $360^\circ$  the maximum angle. It is, therefore, one-sixth of the maximum angle. A right prism with a square base has, in like manner, each solid angle measured by  $90^\circ + 90^\circ + 90^\circ - 180^\circ = 90^\circ$ , which is  $\frac{1}{4}$  of the maximum angle. And thus it may be found that each solid angle of a right prism, with an equilateral

Triangular	base is $\frac{1}{2}$	max. angle $= \frac{5}{6} \cdot 1000.$
Square	. . . $\frac{1}{4}$	$= \frac{3}{4} \cdot 1000.$
Pentagonal	. . . .	$= \frac{1}{10} \cdot 1000.$
Hexagonal	. . . $\frac{1}{6}$	$= \frac{5}{12} \cdot 1000.$
Heptagonal	. . . . $\frac{1}{7}$	$= \frac{4}{7} \cdot 1000.$
Octagonal	. . . . $\frac{1}{8}$	$= \frac{6}{15} \cdot 1000.$
Nonagonal	. . . . $\frac{1}{9}$	$= \frac{7}{16} \cdot 1000.$
Decagonal	. . . . $\frac{1}{10}$	$= \frac{8}{19} \cdot 1000.$
Undecagonal	. . . .	$= \frac{9}{22} \cdot 1000.$
Duodecagonal	. . . . $\frac{1}{12}$	$= \frac{10}{21} \cdot 1000.$
$m$ gon	base is $\frac{1}{m}$	$= \frac{m-2}{2m} \cdot 1000.$

Hence it may be deduced that each solid angle of a regular prism, with triangular base, is half each solid angle of a prism with a regular hexagonal base. Each with regular

Square base	$\equiv \frac{1}{2}$	of each, with regular octagonal base.
Pentagonal base	$\equiv \frac{1}{3}$	. . . . decagonal base.
Hexagonal base	$\equiv \frac{1}{4}$	. . . duodecagonal base.
	$m-4$	
$\frac{1}{m}$ gon base	$\equiv \frac{1}{m}$	. . . $m$ gon base.
	$m-2$	

Hence again we may infer that the sum of all the solid angles of any prism of triangular base, whether that base be regular or irregular, is half the sum of the solid angles of a prism of quadrangular base, regular or irregular. And the sum of the solid angles of any prism of

Tetragonal base is  $\frac{1}{2}$  sum of angles in prism of pentagonal base.  
 Pentagonal . . .  $\frac{1}{2}$  . . . . . hexagonal base.  
 Hexagonal . . .  $\frac{1}{2}$  . . . . . heptagonal base.  
 $m$  gon  $\frac{m-2}{2}$  . . . . .  $(m+1)$  gon base  
 $m$  gon  $\frac{m-1}{2}$  . . . . .

2. Let us compare the solid angles of the five regular bodies. In these bodies if  $m$  be the number of sides of each face;  $n$  the number of planes which meet at each solid angle;  $\frac{1}{2}O$  = half the circumference or  $180^\circ$ ; and  $A$  the plane angle made by two adjacent faces; then we have

$\sin \frac{1}{2} A = \frac{\cos \frac{1}{2n}}{\sin \frac{1}{2m}}$ . This theorem gives, for the

$360^\circ : 3\cdot70^\circ 31' 42''$	$- 180^\circ :$
$360^\circ : 3\cdot90^\circ$	$- 180^\circ$
$360^\circ : 4\cdot109^\circ 28' 18''$	$- 360^\circ$
$360^\circ : 3\cdot116^\circ 33' 54''$	$- 180^\circ$
$360^\circ : 5\cdot138^\circ 11' 23''$	$- 540^\circ$

For more examples in illustration of this new theory see Hutton's Course, vol. iii. pp. 90, 91.

SOLIDS, in anatomy, are the bones, ligaments, membranes, muscles, nerves, and vessels, &c. The solid parts of the body, though equally composed of vessels, are different with regard to their consistence; some being hard and others soft. The hard, as the bones and cartilages, give firmness and attitude to the body, and sustain the other parts. The soft parts, either alone or together with the hard, serve to execute the animal functions. See ANATOMY, Index.

**SOLIDAGO**, in botany, golden rod, a genus of plants belonging to the class of syngenesia, and to the order of polygania superficia; natural order forty-ninth, compositæ. The receptacle is naked; the pappus simple; the radii are commonly five; the scales of the calyx are imbricated and curved inward. There are fourteen species; viz. 1. *S. altissima*; 2. *bicolor*; 3.

plane angle formed by every two contiguous faces of the tetraëdron,  $70^\circ 31' 42''$ ; of the hexaëdron,  $90^\circ$ ; of the octaëdron,  $109^\circ 28' 18''$ ; of the dodecaëdron,  $116^\circ 33' 54''$ ; of the icosædron,  $138^\circ 11' 23''$ . But in these polyedra the number of faces meeting about each solid angle are 3, 3, 4, 3, 5, respectively. Consequently the several solid angles will be determined by the subjoined proportions:—

*Canadensis*; 4. *coesia*; 5. *flexicaulis*; 6. *lan-*  
*ceolata*; 7. *lateriflora*; 8. *latieolia*; 9. *Mexi-*  
*cana*; 10. *minuta*; 11. *noveboracensis*; 12. *ri-*  
*gida*; 13. *sempervirens*; and 14. *S. virgaurea*,  
or golden rod, which grows frequently in rough  
mountainous pastures and woods; and is the  
only species which is a native of Britain. The  
stems are branched, and vary from six inches to  
five feet high, but their common height is about a  
yard. The leaves are a little hard and rough to  
the touch; the lower ones oval lanceolate, ge-  
nerally a little serrated and supported on foot-  
stalks; those on the stalks are elliptical; the  
flowers are yellow and grow in spikes from the  
axle of the leaves; the scales of the calyx are  
lanceolate, of unequal length, and of a pale  
green color; the female florets in the rays are  
from five to eight; the hermaphrodite flowers  
in the disc from ten to twelve. There is a va-  
riety of this species called *S. virgaurea canescens*.

a native of Wales, which is found on rocks from six inches to a foot high.

**SOLIDATUM**, used in the neuter gender, is taken for that absolute right or property which a man has in any thing.—*Malmsb. lib. 1.*

**SOLIDITY**, in philosophy, is that property of matter, or body, by which it excludes all other bodies from the place which itself possesses; and, as it would be absurd to suppose that two bodies could possess one and the same place at the same time, it follows that the softest bodies are equally solid with the hardest. See *METAPHYSICS*. Among geometers the solidity of a body denotes the quantity or space contained in it, and is called also its solid content. The solidity of a cube, prism, cylinder, or parallelopiped, is had by multiplying its basis into its height. The solidity of a pyramid or cone is had by multiplying either the whole base into a third part of the height, or the whole height into a third part of the base.

**SOLIDUNGULOUS**, *adj.* Lat. *solidus* and *ungula*. Whole-hoofed.

It is set down by Aristotle and Pliny that an horse, and all *solidungulous* or whole-hoofed animals, have no gall; which we find repugnant unto reason.

*Browne's Vulgar Errors.*

**SOLIFID'IAN**, *n. s.* Lat. *solus* and *fides*. One who supposes only faith, not works, necessary to justification.

It may be justly feared that the title of fundamentals, being ordinarily confined to the doctrines of faith, hath occasioned that great scandal in the church of God, at which so many myriads of *solifidians* have stumbled, and fallen irreversibly, by conceiving heaven a reward of true opinions. *Hammond.*

**SOLIFIDIANS**. Without entering into this controversy, as a point of religion, which has more or less divided Protestants ever since the reformation, we would beg leave to consider the subject, for a moment, in a philosophical point of view. The whole argument seems to resolve itself into this simple question of philosophy, Can a created being merit any thing at the hand of its creator? The candid philosopher will certainly answer this question in the negative. If then, even upon the supposition of the creature having never sinned, it can merit nothing, how much less can a sinful creature, by any exertions of its own, atone for its past offences? Obvious as this truth seems to be, yet the opposite doctrine, that something can and must be done by the sinner, to atone for his past sins and merit forgiveness, has formed a constituent part of all religions, in all ages and countries, from the most dark and bloody superstitions, which placed merit in human sacrifices, and even sacrificed children to pacify the offended deities, down through the whole system of popery till the reformation. Nor have even the reformed churches got entirely rid of it, as appears from the above quotation from Dr. Hammond, as well as from the whole of the Arminian system. But the church of Rome certainly carried the doctrine to the most extravagant height, when they taught that a man could not only, by his good works, merit forgiveness for his own sins, but accumulate such a stock of works of supererogation as to atone for the sins of his neighbours! In a word, however Solifidianism may be ridiculed,

it appears to be founded both on Scripture and reason; and, as sin and misery entered by the want of faith in the first threatening, so the only remedy is sola fide, by faith alone in the great work performed by our Saviour.

**SOLIFIDIANISM** (from *sola* and *fides*). The doctrine of salvation by faith alone. See last article.

**SOLIGNAC** (Peter Joseph De La Pimpie, chevalier of), a learned and amiable French historian, born at Montpellier in 1687. He was employed by the French court in a respectable situation in Poland, where he became acquainted with king Stanislaus, who made him his secretary. He wrote a History of Poland, and other works; and died in 1773, aged eighty-six.

**SOLIL'QOQUY**, *n. s.* Fr. *soliloque*; Lat. *solus* and *loquor*. A discourse made to one's self.

If I should own myself in love, you know lovers are always allowed the comfort of *soliloquy*.

*Spectator.*

He finds no respite from his anxious grief,  
Then seeks from his *soliloquy* relief.

*Garth's Disp.*

The whole poem is a *soliloquy*: Solomon is the person that speaks: he is at once the hero and the author; but he tells us very often what others say to him.

*Prior.*

A *SOLILOQUY*, according to Papia, is a discourse by way of answer to a question that a man proposes to himself. Soliloquies are become too common on the modern stage; yet can nothing be more inartificial, or more unnatural, than an actor's making long speeches to himself, to convey his intentions, &c., to the audience. Where such discoveries are necessary to be made, the poet should rather take care to give the dramatic persons such confidants as may necessarily share their inmost thoughts; by which means they will be more naturally conveyed to the audience. Yet is even this a shift an accurate poet would not be found to have occasion for. The duke of Buckingham has well said,

' Soliloquies had need be very few,  
Extremely short, and spoke in passion too.  
Our lovers talking to themselves, for want  
Of others, make the pit their confidant:  
Nor is the matter mended yet, if thus  
They trust a friend, only to tell it us.'

Soliloquies are not, however, quite so unnatural as some think. Let a man be alone, and his thoughts anxiously bent on some object, and he will involuntarily speak out to himself.

**SOLIMAN I.**, emperor of the Turks, succeeded his father Bajazet I. in 1403. He was a brave and enterprising prince, but very much devoted to his pleasures. He was dethroned by his brother Moses or Musa in 1410, and soon after murdered.

**SOLIMAN II.**, emperor of the Turks, surnamed the Magnificent, was the only son of Selim I., whom he succeeded in 1520. He was educated in a manner very different from the Ottoman princes in general; for he was instructed in the maxims of politics and the secrets of government. He began his reign by restoring those persons their possessions whom his father had unjustly plundered. He re-established the authority of the tribunals, and bestowed the government of provinces upon one but persons of

wealth and probity : ‘I would have my viceroys (he said) resemble those rivers that fertilise the fields through which they pass, not those torrents which sweep every thing before them.’ After concluding a truce with Ismael, sophy of Persia, and subduing Gozeli Bey, who had raised a rebellion in Syria, he turned his arms against Europe. Belgrade was taken in 1521, and Rhodes surrendered in 1522, after an obstinate and enthusiastic defence. See RHOES. In 1526 he defeated and slew the king of Hungary in the famous battle of Mohatz. Three years after he conquered Buda, and immediately laid siege to Vienna itself. But after continuing twenty days before that city, and assaulting it twenty times, he was obliged to retreat with the loss of 80,000 men. Some time after he was defeated by the Persians, and disappointed in his hopes of taking Malta. He succeeded, however, in dispossessing the Genoese of Chio, an island which had belonged to that republic for above 200 years. He died while he was besieging Sigeth, in Hungary, on the 30th of August 1566, aged seventy-six. He was a prince of the strictest probity, a lover of justice, and vigorous in the execution of it; but he tarnished all his glory by cruelty. After the battle of Mohatz he ordered 1500 prisoners, most of them gentlemen, to be ranged in a circle, and beheaded in presence of his whole army. Soliman thought nothing impossible which he commanded: A general having received orders to throw a bridge over the Drave, wrote him that it was impossible. The sultan sent him a long band of linen with a renewed order written on it; concluding that ‘if the bridge were not finished upon his arrival, he would hang him with the very linen which informed him of his will.’

SOLIMAN III., the son of Ibrahim I., was taken from prison and made emperor by the Janizaries, in 1687, on the deposition of Mahomet IV. his brother, whom he sent to the same jail. He was an indolent prince, wholly governed by his ministers; and died in 1691.

SOLIMENE (Sir Francis), an eminent painter, born at Nocera near Naples in 1657. He studied first under his father Angelo, who was a good painter, and next under Francis Maria at Naples in 1674, who, envying his rising merit, wished to discourage him. He soon became eminent, however, in chiaro oscuro; and painted the Jesuit’s chapel of St. Anne in a style so superior that he astonished painters of established reputation. Philip V. employed him and invited him to Madrid, as also did Louis XIV. to Paris, but he declined. The emperor Charles VI. was so pleased with his paintings that he knighted him. In 1701 he went to Rome, where he was much patronised by the pope and cardinals. He was also a poet, and his Sonnets are esteemed. He died in 1747, aged ninety.

SOLINUS (Caius Julius), a Latin grammarian and historian, born at Rome in the end of the first century, according to Lempriere, but according to Dr. Watkins in the middle of the third. His Polyhistor is a collection of historical and geographical remarks on the most celebrated places of antiquity. Pliny is often quoted in it, and it is written so much in Pliny’s style,

that he has been called Pliny’s ape. The best edition is that of Salmasius, November, 1777.

SOLIPEDE, *n. s.* Lat. *solutus* and *pedes*. An animal whose feet are not cloven.

*Solipedes*, or firm footed animals, as horses, asses, and mules, are in mighty number.

Browne’s *Vulgar Errors*.

SOLIPUGA, or SOLIFUGA, in entomology, the name given by the Romans to a small venomous insect of the genus aranea, or spider kind, called by the Greeks heliocentros, or olocentros; both words signifying an animal which stings most in the country and seasons where the sun is hottest. Solinus makes this creature peculiar to Sardinia; but this is contrary to all the accounts given us by the ancients. It is common in Africa and some parts of Europe. Almost all the hot countries produce this venomous little creature. It lies under the sand to seize other insects as they go by; and, if it meet with any uncovered part of a man, produces a wound which proves very painful; some say the bite is absolutely mortal, but this seems not true. Solinus and others write the word solifuga, erroneously deriving the name from the notion that this animal flies from the sun’s rays, and buries itself in the sand.

SOLIS (Antony de), an ingenious Spanish writer, of an ancient and illustrious family, born at Placenza in Old Castile, in 1610. He was intended for the law; but his inclination to poetry prevailed. Philip IV. made him his secretary; and after his death the queen-regent appointed him historiographer of the Indies, a place of great profit and honor: his History of the Conquest of Mexico shows that she could not have named a fitter person. He is better known by this history than by his poetry and dramatic writings. He turned priest at fifty-seven years of age, and died in 1686, aged seventy-six.

SOLIS (John Dias de), a Spanish navigator, the first who sailed up the river Plata, in 1515.

SOLITARIES, an order of nuns of St. Peter of Alcantara, instituted in 1676, the design of which was to imitate the severe penitent life of that saint. Thus they are to keep a continual silence, never to open their mouths to a stranger; to employ their time wholly in spiritual exercises, and leave their temporal concerns to a number of maids, who have a particular superior in a separate part of the monastery: they always go bare-footed, without sandals; gird themselves with a thick cord, and wear no linen.

SOLITARY, *adj. & n. s.* Fr. *solitaire*; SOLITAIRE, *n. s.* Latin *solitarius*. SOLITARILY, *adv.* Retired; living SOLITARINESS, *n. s.* alone; single; SOLITUDE. lonely; dismal: a solitary or solitaire is, one who lives alone; a hermit: the adverb corresponding with the adjective: and solitude and solitariness both mean, lonely life or place; state of being solitary.

Let that night be solitary, let no joyful voice come therein.

*Job.*

Feed thy people with thy rod, the flock of thine heritage which dwell solitarily in the wood.

*Micah vii. 14.*

You subject yourself to solitariness, the sly enemy that doth most separate a man from well-doing.

*Sidney.*

*How should that subsist solitarily by itself which hath no substance, but individually the very same whereby others subsist with it?* *Hooker.*

*In respect that it is solitary, I like it very well; but, in respect that it is private, it is a very vile life.* *Shakespeare.*

*It had been hard to have put more truth and untruth together, in few words, than in that speech, Whosoever is delighted with solitude is either a wild beast or a god.* *Bacon.*

*At home, in wholesome solitariness,  
My piteous soul began the wretchedness  
Of suitors at the court to mourn.* *Donne.*

*Nor did a solitary vengeance serve; the cutting off one head is not enough; the eldest son must be involved.* *King Charles.*

*Those rare and solitary, these in flocks.* *Milton.*

*What callest thou solitude? Is not the earth  
With various living creatures, and the air,  
Replenished, and all these at thy command,  
To come and play before thee?* *Id. Paradise Lost.*

*Relations alternately relieve each other, their mutual concurrences supporting their solitary instabilities.* *Browne.*

*Him fair Lavinia  
Shall breed in groves to lead a solitary life.* *Dryden's Æneid.*

*Such only can enjoy the country, who are capable of thinking when they are there: then they are prepared for solitude, and in that solitude is prepared for them.* *Drydon.*

*Often have I been going to take possession of tranquillity, when your conversation has spoiled me for a solitaire.* *Pope.*

*You describe so well your hermetical state of life, that none of the ancient anchorites could go beyond you, for a cave with a spring, or any of the accommodations that befit a solitary.* *Id. Letters.*

*In these deep solitudes, and awful cells,  
Where heavenly pensive contemplation dwells.* *Pope.*

*To be exempt from the passions with which others are tormented is the only pleasing solitude. I can very justly say, with the ancient sage, 'I am never less alone than when alone.'* *Steele.*

*The solitude of his little parish is become matter of great comfort to him, because he hopes that God has placed him and his flock there, to make it their way to heaven.* *Law.*

*The man to solitude accustomed long  
Perceives in every thing that lives a tongue;  
Not animals alone, but shrubs and trees  
Have speech for him, and understood with ease.* *Cowper.*

**SOL'AR, n. s.** Low Lat. *solarium*. A garret. Some skilfully drieth their hops on a kel, And some on a *sollar*, oft turning them wel. *Tusser.*

**SOLO**, or **SAURA-CORTA**, an inland town and district of Java, the residence of an emperor. The town is populous, intersected with broad and shaded avenues or streets, running at right angles. The Crattan, where the emperor resides, is very spacious, and comprises several palaces: the other chiefs and nobility live in villas, surrounded by high walls. The European town and fort here are very neat. The latter, not above 800 yards from the Crattan, contained a British garrison, when the island of Java was in possession of this country. A fine river flows near this town, and, passing through the dominions of the sultan and emperor, falls into the harbour of Gresie.

**Solo**, in the Italian music, is frequently used

in pieces consisting of several parts, to mark those that are to perform alone; as *fiauto solo*, *violino solo*. It is also used for sonatas composed for one violin, one German flute, or other instrument, and a bass; thus we say, Corelli's solos, Geminiani's solos, &c. When two or three parts play or sing separately from the grand chorus, they are called a *doi solo*, a *tre solo*, &c. Solo is sometimes denoted by S.

In the concertos of Corelli, Geminiani, and Handel, chiefly composed à due cori, or two orchestras, the principal parts are said to belong to the concertini, or solo parts; as *violino primo concertino*, *violino secondo del concertino*, &c.; and the inferior parts, that only play in the full chorus, are called *ripieni*; as *violino primo ripieno*, *violino secondo ripieno*, or *del concerto grosso*, or the great and full concert. Solos, which used to afford the most exquisite delight to persons of refined taste, when composed and performed by great masters, are now wholly laid aside; and whoever attempts to perform one is subjected to a penalty instead of a reward; a law instituted at the concert of ancient music, where a composition was never thought complete by the late earl of Sandwich, without a kettle-drum, nor with, unless he beat it himself. And at the commemoration of Handel, the double drums, double cartels, *tromboni*, &c., augmented his lordship's pleasure, in proportion to the din and stenterophonic screams of these truly savage instruments; which, in so wide a building as Westminster Abbey, and softened by so powerful a chorus of voices and instruments as were assembled at the commemoration, had, occasionally a fine effect; but, in a more confined space, the almost incessant use of the *tromboni*, and, perpetual roll of the double drums, annihilate all the pleasing effects of mellifluous tones.

**SOLOEIS**, **SOLOENTIA**, or **SOLUS**, a promontory of Lybia, at the extremity of Mount Atlas; now called Cape Cantic.

**SOLONTIA**, or **SOLOEIS**, an ancient town of Sicily, between Panormus and Chimera, now called Scolanto.

**SOLOFRA**, a town in the Principaturo Ultra, Naples, with 6100 inhabitants. It has manufactures of leather, parchment, and gold and silver plate.

**SOLOMON**, Heb. שְׁלֹמֹן, i. e. peaceable, the son and successor of David, king of Israel, by Bathsheba; who seems to have been so named by his father in the spirit of prophecy, as he had the most peaceable and flourishing reign of any monarch in Israel or Judah. He was born about A. M. 2971. His judicious government in the early part of his reign; his repeated divine communications, and wise choice; his extensive and successful commerce with Egypt, Ophir, Tyre, &c.; his immense riches in consequence; his fame for wisdom, which reached the most remote corners of the civilised world (see *SHEBA*); his superb building and solemn dedication of the temple, with his excellent prayer on that occasion, and his costly sacrifices, miraculously consumed; with his feast of seven days given to the whole people, and many other interesting particulars of his reign, are recorded in 1 Kings

i—ix, and 2 Chron. i—ix. But, while the sacred historians have done all justice to his uncommon wisdom, they have not concealed his unparalleled folly and debauchery, in not only taking 1000 wives and concubines, but in departing from the true God, and, to please his heathen wives, sacrificing to idols. In this defection, his lawful wife, the daughter of Pharaoh and sister of Shishak, seems to have had no concern, as the idols of Egypt are not mentioned. Some commentators rather think that princess became a Jewish proselyte. Dr. Watkins says it was through his marriage with the princess of Egypt that he fell into idolatry; but the doctor has no authority to say so, from history, sacred or profane. Ashtoreth, Milcom, Chemosh, and Moloch, were not Egyptian idols. Solomon began to build the temple in the fourth year of his reign, A. M. 2993, and completed it in his eleventh year, A. M. 3000. His kingdom extended from the north-east border of Egypt to the Euphrates. His trade with Ophir alone has been estimated at £2,000,000 sterling. As an author, his Proverbs, Ecclesiastes, and Song of Songs, constitute a valuable part of the canon of Scripture. See *SCRIPTURE*. He is also recorded (1 Kings iv. 33) to have written upon botany, zoology, ornithology, entomology, and ichthyology; but his works on these subjects are lost. After reigning forty years, he died A. M. 3011, and A. A. C. 975, aged fifty-eight.

**SOLON** (Ben Job Jalla), an African prince, born at Bonda, a town founded by his father Ibrahim, in the kingdom of Seregal, or Futa. Being sent by his father, in 1731, to the sea-coast to sell some slaves, he was taken prisoner by the Mandingoës, and sold for a slave to captain Pyke, an Englishman, who carried him to Annapolis, in Maryland, where he was purchased by Mr. Tolsey, merchant. He was at last ransomed by general Oglethorpe, for the African Company, and brought to England in 1733. After continuing in England about fourteen months, during which he translated several Arabian MSS. for Sir Hans Sloane, he returned laden with valuable presents to the amount of £500 to his own country, which he found depopulated by war, and his father dead. He was a man of good natural parts, and had the Koran by heart.

**SOLON** (Ben Virga), a Jewish rabbi and physician, born in Spain in the sixteenth century. He wrote a curious book, entitled *Schebet Judah*, or a History of the Jews, from the destruction of the temple to his own time. A Latin version of it was published by Gentius, at Amsterdam, in 1651, in 4to.

**SOLON, THE SONG OF**, a canonical book of the Old Testament, justly ranked by the Jews among the Hagiographa, or holy writings. See *SCRIPTURE*.

**SOLOMON'S ISLANDS**, a group of large islands, in the South Pacific, lying chiefly between Long. 155° 160' E., and lat. 5° 12' S. Alvaro de Mendana discovered these islands in 1567, at which time it is affirmed the natives were cannibals. They were computed at eighteen in number, and some of them of large size. The names of those best known are, Ysabel, Guadalcanar, San Cris-

t oval, and New Georgia. Scarcely any remembrance of them was preserved, until de Surville's voyage in 1767, who had an unfortunate encounter here, which terminated in his entrapping a young islander into his possession, and carrying him off. They were called by him the Land of Arsacides. They have been seen, but not completely surveyed, by later navigators. Great variety of vegetables grow here: and the wild boar is common. Prodigious numbers of birds are also seen. Snakes are among the animals of the Solomon Islands: ants of great size, and many uncommon insects. The inhabitants, apparently of different races, are some perfectly black, others copper colored. The former have woolly hair, soft to the touch: the nose not so flat, nor are the lips so thick as in negroes. Those who are copper colored have black hair; and most of them cut it short around the crown, powdering both it and the eyebrows with lime. The men tattoo their bodies, or paint a white line over the eyebrows, and it appears that this latter ornament is used by the women also. The ears are pierced, and rings of different kinds inserted, so as to dilate them to a great size; an ornament is likewise worn in the septum of the nose. Both sexes go entirely naked, except a scanty girdle around the waist. Their arms are the bow and arrow, spears, clubs, and shields of wicker; the arrows are pointed with fish bone; and their canoes are skilfully and neatly constructed: the head and stern very high, and in general ornamented with pieces of mother-of-pearl. It is affirmed that voyages of ten or twelve days duration are made in these vessels.

**SOLON'S SEAL.** See *CONVALLARIA*.

**SOLON'S SEAL, PENNSYLVANIAN.** See *UVULARIA*.

**SOLON**, one of the seven wise men of Greece, was born at Salamis, and descended from the truly patriotic king, Codrus. He had recourse to merchandise for his subsistence. He had, however, a greater thirst after knowledge and fame than after riches, and made his mercantile voyages subservient to the increase of his intellectual treasures. He very early cultivated poetry, and applied himself to the study of wisdom. The device by which he prevailed on the Athenians to repeal the law which made it death to propose the renewal of their claim to his native island, with the success that followed, is related under *ATTICA*. His popularity was extended through Greece in consequence of a successful alliance which he formed among the states in defence of the temple at Delphos against the Cirrhaens. When dissensions had arisen at Athens between the rich creditors and the poor debtors, Solon was created archon, with the united powers of supreme legislator and magistrate. He soon restored harmony between the rich and poor: he cancelled the debts which had proved the occasion of so much oppression, and ordained that in future no creditor should be allowed to seize the body of the debtor for his security: he made a new distribution of the people, instituted new courts of judicature, and framed a judicious code of laws, which afterwards became the basis of the laws of the XII tables in Rome. Among his criminal laws are

many wise and excellent regulations; but two of them were very exceptionable; the permission of a voluntary exile to persons that had been guilty of premeditated murder, and the appointment of a less severe punishment for a rape than for seduction. Those who wish to see the comparative excellence of the laws of Moses, of Lycurgus, and Solon, may consult Prize Dissertations relative to Natural and Revealed Religion, by Teyler's Theological Society, vol. ix. For the interview which Solon had with Crœsus, king of Lydia, see CRŒSUS. Solon died in Cyprus, in his eightieth year. Statues were erected to his memory both at Athens and Salamis. Among the precepts which have been ascribed to Solon are the following: 'Laws are like cobwebs, that entangle the weak, but are broken through by the strong. He who has learned to obey, will know how to command. In every thing you do, consider the end.'

SOLONA, a town of Gallia Cisalpina, seated on the Utens.

SOLONIUM, an ancient town of Latium, on the borders of Etruria.

SOL'STICE, n. s. } Fr. solstice; Lat. solsti'cial, adj. } stitium. The point beyond which the sun does not go; the tropical point: relating or belonging to the solstice.

Let the plowmen's prayer  
Be for moist solstices, and winters fair. *May's Virgil.*

From the north to call  
Decrepit winter; from the south to bring  
Solstitial summer's heat. *Milton's Paradise Lost.*

The sun, ascending unto the northern signs, begetteth first a temperate heat in the air which by his approach unto the solstice he intendeth, and by continuation increaseth the same even upon declination.

*Browne's Vulgar Errours.*

Observing the dog-days ten days before and after the equinoctial and solstitial points, by this observation alone are exempted a hundred days. *Id.*

The fields  
Labour'd with thirst; Aquarius had not shed  
His wonted showers, and Sirius parched with heat  
Solstitial the green herbs. *Philipps.*

SOLSTICE, in astronomy, that time when the sun is in one of the solstitial points; that is, when he is at his greatest distance from the equator; thus called because he then appears to stand still, and not to change his distance from the equator for some time; an appearance owing to the obliquity of our sphere, and which those living under the equator are strangers to. The solstices are two in each year; the æstival, or summer solstice, and the hyemal or winter solstice. The summer solstice is when the sun seems to describe the tropic of cancer, which is on June 22d, when he makes the longest day; the winter solstice is when the sun enters the first degree, or seems to describe the tropic of capricorn, which is on December 22d, when he makes the shortest day. This is to be understood as in our northern hemisphere; for in the southern the sun's entrance into capricorn makes the summer solstice, and that into cancer the winter solstice. The two points of the ecliptic wherein the sun's greatest ascent above the equator, and his descent below it, are terminated, are called the solstitial points; and a circle, supposed to pass through the poles of the world and

these points, is called the solstitial colure. The summer solstitial point is in the beginning of the first degree of cancer, and is called æstival or summer point; and the winter solstitial point is in the beginning of the first degree of capricorn, and is called the winter point. These two points are diametrically opposite to each other.

SOL'UBLE, adj. } Lat. *solutus*. Capable

SOLUBIL'ITY, n. s. } of dissolution or separation of parts: the noun substantive corresponding.

This cannot account for the indissolvable coherence of some bodies, and the fragility and *solutility* of others. *Glanville.*

Sugar is a sal oleosum, being *solute* in water, and fusible in fire. *Arbuthnot.*

SOLVE, v. a. } Lat. *solvō*. To clear; ex-

SOLV'IBLE, adj. } plain; untie an intellectual

SOLU'TION, n. s. } knot: the adjective corre-

SOLU'TIVE, adj. sponding: solution is, disjunction; matter dissolved, or that which contains or consists of dissolved matter; resolution of a

doubt or mental difficulty: solutive, laxative;

causing solution.

In all bodies there is an appetite of union, and evitatem of solution of continuity.

*Bacon's Natural History.*

Though it would not be so abstersive, opening, and solutive as mead, yet it will be more lenitive in sharp diseases. *Bacon.*

He would *solve* high dispute  
With conjugal caresses. *Milton.*

Something yet of doubt remains,  
Which only thy *solution* can resolve. *Id. Paradise Lost.*

Intellective memory I call an act of the intellective faculty, because it is wrought by it, though I do not inquire how or where, because it is not *solute*. *Hale's Origin of Mankind.*

With hope and fear  
The woman did the new *solution* hear;  
The man diffides in his own augury,  
And doubts. *Dryden.*

The limiting of the regale only to christian princes did rather involve and perplex the cause, than any way *solve* it. *Lelley.*

When salt of tartar per deliquium, poured into the *solution* of any metal, precipitates the metal, and makes it fall down to the bottom of the liquor in the form of mud, does not this argue that the acid particles are attracted more strongly by the salt of tartar than by the metal, and by the stronger attraction go from the metal to the salt of tartar?

*Newton's Opticks.*

Aretæus, to procure sleep, recommends a *solution* of opium in water to foment the forehead. *Arbuthnot.*

Do thou, my soul, the destined period wait,  
When God shall *solve* the dark decrees of fate;  
His now unequal dispensations clear,  
And make all wise and beautiful appear. *Tickell.*

It is mere trifling to raise objections, merely for the sake of answering and *solving* them. *Watts.*

This will instruct you to give a plainer *solution* of any difficulties that may attend the theme, and refute objections. *Id.*

SOLVENT, adj. Lat. *solvens*. Having the power to cause dissolution; hence power to discharge a debt or debts.

When dissolved in water, it is not by the eye distinguishable from the *solvent* body, and appears as fluid. *Eyle.*

**SOLUND-GOOSE**, *n.s.* A fowl. I know not whether solund or soland.—Johnson. Perhaps from Goth. *sula*, to foul, because its smell is fetid.—Thomson.

A *soland-goose* is in bigness and feather very like a tame goose, but his bill longer, and somewhat pointed, his wings also much longer, being two yards over.

*Grew.*

A Scot, when from the gallows-tree let loose,  
Drops into Styx, and turns a *soland-goose*.

*Cleaveland.*

**SOLUND-GOOSE, or SOLAN-GOOSE**, in ornithology. See *PELICANUS*. Cleaveland by writing, and Johnson by quoting, such nonsense as the above, show themselves to be a couple of illiberal English geese.

**SOLVYNNS** (Francis Balthazar), an oriental traveller, born at Antwerp, in 1760, displayed his abilities at an early age, as a painter and engraver. His first works were sea-views. He went to Germany with the archduchess Maria Christina, and after the death of that princess accompanied Sir Home Popham to the Red Sea and the East Indies. On his arrival at Hindostan he studied the languages of the East, and their manners and customs, that he might be able accurately to illustrate them by the pen and pencil. Having after fifteen years' absence returned to Europe, he settled at Paris, and commenced a work entitled *Les Hindous, ou Description pittoresque des Mœurs, Costumes, et Cérémonies religieuses de ce Peuple*, in 4 vols. large folio. After the restoration of the prince of Orange, Solvyns returned to his native country, and was made captain of the port of Antwerp, where he died October 10th, 1824.

**SOLWAY FRITH**, or Booness Wath, a navigable arm of the sea, which extends east from the Irish Sea, and forms the boundary between Scotland and England for upwards of fifty miles. The shore on the Scottish coast is flat and sandy, with a few sunk rocks, but most parts afford safe landing places for small vessels. The frith is navigable for vessels of 100 tons within six miles of its extremity; but the sea is gradually retiring from the land, so that several places are now covered with grass, over which, in the memory of persons still living, the tide used to flow. The tides are regular, ten or twelve feet above low water mark; at spring tides twenty feet. Many rivers run into this frith. Those on the Scottish side are chiefly the Nith, Annan, Urr, South Dee, and Kirtle; and the Sark, the Esk, and the Liddle, which three last unite and form its eastern extremity. This frith abounds with fish, particularly excellent salmon; and the coasts on the Scottish side abound with those wonderful productions of nature, the sea polypi, or animal flowers.

**SOLWAY MOSS**, a large black morass of England, in Cumberland, on the ground formerly called the Debateable Land, consisting of about 1600 acres; a considerable quantity of which moved off in 1771. This place is memorable too for the shameful surrender of the Scottish army to the English, on account of king James V. having changed their general; which disgrace broke the king's heart. See *SCOTLAND*. Gilpin, in his Observations on the Mountains and Lakes

of Cumberland, &c., two vols., 1781, thus describes the particulars of this memorable inundation:—‘ Solway Moss is a flat area, about seven miles in circumference. The substance of it is a gross fluid, composed of mud, and the putrid fibres of heath, diluted by internal springs, which arise in every part. The surface is a dry crust, covered with moss and rushes; offering a fair appearance over an unsound bottom, shaking with the least pressure. Cattle, by instinct, know and avoid it. Where rushes grow the bottom is soundest: the adventurous passenger, therefore, who sometimes in dry seasons traverses this perilous waste to save a few miles, picks his cautious way over the rushy tussocks as they appear before him. If his foot slips, or if he ventures to desert this mark of security, it is possible he may never more be heard of. On the south Solway Moss is bounded by a cultivated plain, which declines gently through the space of a mile to the river Esk. This plain is lower than the moss, being separated from it by a breast-work formed by digging peat, which makes an irregular though perpendicular line of low black boundary. It was the bursting of the moss through this peat breast-work, over the plain between it and the Esk, that occasioned the dreadful inundation which destroyed so large a district. The more remarkable circumstances relating to this calamitous event were these:—On the 13th of November, 1771, in a dark tempestuous night, the inhabitants of the plain were alarmed with a dreadful crash, which they could no way account for; many of them were then in the fields watching their cattle, lest the Esk, which was then rising violently in the storm, should carry them off. In the mean time the enormous mass of fluid substance, which had burst from the moss, moved slowly on, spreading itself more and more, as it got possession of the plain. Some of the inhabitants, through the terror of the night, could plainly discover it advancing like a moving hill. This was in fact the case; for the gush of mud carried before it through the first 200 or 300 yards of its course a part of the breast-work; which, though low, was yet several feet in perpendicular height; but it soon deposited this solid mass, and became a heavy fluid. One house after another it spread round, filled and crushed into ruin, just giving time to the terrified inhabitants to escape. Scarcely any thing was saved except their lives; nothing of their furniture, few of their cattle. Some people were even surprised in their beds, and had the additional distress of flying naked from the ruin. The morning light explained the cause of this amazing scene of terror, and showed the calamity in its full extent; and yet, among all the conjectures of that dreadful night, the mischief which really happened had never been supposed. Lands, which in the evening would have let for twenty shillings an acre, in the morning were not worth sixpence. On this well-cultivated plain twenty-eight families had their dwellings and little farms: every one of which, except perhaps a few who lived near the skirts of it, had the world totally to begin again. Who could have imagined that a breast-work, which had stood for ages, should at length give

way? or that those subterranean floods which had been bedded in darkness since the memory of man, should have ever burst from their black abode? This dreadful inundation, though the first shock of it was most tremendous, continued still spreading for many weeks, till it covered the whole plain, an area of 500 acres; and, like molten lead poured into a mould, filled all the hollows of it, lying in some parts thirty or forty feet deep, reducing the whole to one level surface.' The plain that was covered with this Stygian torrent, has however since been restored to fertility by the exertions of a Yorkshireman named Wilson, whose self-taught genius at once conceived a novel plan, and directed its execution.

SOLYHUL. See SOLIHULL.

SOLYMA, or HIEROSOLYMA, an ancient name of Jerusalem. Mr. Pope, in his beautiful poem of the Messiah, invokes the nymphs of Solyma.

SOLYMA, or SOLYME, an ancient town of Lycia. Sarpedon settled in it.—*IHom. Iliad 6. Plin. v. 27.*

SOLYMI, the inhabitants of Solyma; called also Milyades and Termili.

SOMBREIRO, a small island in the West Indies, about three miles square, entirely desert. On this island an unfortunate seaman, Jeffrey, was inhumanly left by order of his captain, for the offence of having tapped a barrel of beer when the water of his Brittannic majesty's brig ran short, and the crew were on short allowance. After eight days' suffering, supporting life only by a few limpets that he picked up on the shore, and a little rain water found in the crevices of the rocks, he was providentially delivered from his desperate situation by the schooner of Marble Head, John Dennis, which touched at the isle, took him off, and landed him in the county of Essex. Sombrero is in long.  $63^{\circ} 28' 30''$  W., lat.  $18^{\circ} 37' 40''$  N.

SOMBREIRO, WONDERFUL PLANT OF, is a strange kind of sensitive plant growing in the East Indies, in sandy bays and in shallow water. It appears like a slender straight stick; but, when you attempt to touch it, immediately withdraws itself into the sand. Miller gives an account of it in his description of Sumatra. He says, the Malays call it lalan lout, that is, sea grass. He never could observe any tentacula: but, after many unsuccessful attempts, drew out a broken piece about a foot long. It was perfectly straight and uniform, and resembled a worm drawn over a knitting needle. When dry it appears like a coral.

SOMBREUIL (Charles Verot de), a French royalist, who distinguished himself by his courage in the opening of the revolution. During the tumults of the Palais royal he saved from the fury of the mob one of the Messrs. de Polignac, and at length emigrated. In the campaign of 1792 he served in the Prussian army, and in 1793 entered into that of the prince of Condé; in the winter of 1794 he commanded a corps of emigrants in Holland. Subsequently he became one of the victims of the ill-concerted English expedition to Quiberon. Our government placed under his command seven regiments, with which he arrived on the coasts of Brittany, July 7th,

1794, was taken prisoner, tried before a military commission, and shot at Vannes.

SOME, *adj.* Sax. *rom*, rum;  
SOM'EBODY, *n. s.* Isl., *Swed.*, Dan.  
SOM'EDEAL, *adv.* and Bel. *som*; Goth.  
SOM'EHOW, and Teutonic *sum*.  
SOM'ETHING, *n. s. & adv.* More or less; part:  
SOM'ETIME, *adv.* used also to express  
SOM'ETIMES, uncertainty or inde-  
SOM'EWHAT, *n. s. & adv.* finiteness of num-  
SOM'EWHERE, *adv.* ber: somebody is  
SOM'EWHILE, *n. s.* any one; any body:  
also a person of some consideration or distinc-  
tion: somedeal is, in some degree (obsolete):  
somehow, any how: something, any thing; any  
quantity; part: and as an adverb in some de-  
gree: sometime is once; formerly: sometimes,  
now and then; at one time or other: somewhat,  
something; more or less: and as an adverb in  
some degree: somewhere, any where: some-  
while, once; one while (obsolete).

Let me leave *some* of the folk that are with me.

*Gen. xxxiii.*

Jesus said, *Somebody* hath touched me; for I per-  
ceive that virtue is gone out of me. *Luke viii. 46.*

Theudas rose up, boasting himself to be *somebody*.

*Acts.*

It may be that the queen's treasure, in so great  
occasions of disbursements, is not always so ready;  
but being paid as it is, now *some*, and then *some*, it is  
no great impoverishment to her coffers.

*Spenser on Ireland.*

Siker now I see thou speak'st of spite,  
All for thou lackest *somedele* their delight. *Spenser.*

Though under colour of the shepherds *somewhile*,  
There crept in wolves full of fraud and guile,  
That often devoured their own sheep,  
And often the shepherd that did 'em keep.

*Id. Pastorale.*

Concerning every of these, *somewhat* Christ hath  
commanded, which must be kept till the world's end:  
on the contrary side, in every of them *somewhat* there  
may be added, as the church judges it expedient.

*Hoover.*

O that Sir John were come, he would make this a  
bloody day to *somebody*. *Shakspeare. Henry IV.*

I will acquaint you with the perfect spy of the  
time; for't must be done to-night, and *something*  
from the palace. *Shakspeare.*

Good *sometime* queen, prepare thee hence for  
France. *Id.*

Yet well I remember  
The favours of these men: were they not mine?  
Did they not *sometime* cry, all hail! to me? *Id.*

We landed *some* hundred men, where we found  
*some* fresh water. *Raleigh.*

Being encountered with a strong storm *some* eight  
leagues to the westward of Scilly, I held it the office  
of a commander to make a port. *Id.*

First go with me, *some* few of you, and see the  
place, and see how it can be made convenient for you;  
and then send for your sick. *Bacon.*

Old men's spirits visual, contrary to those of pur-  
blind men, unite not but when the object is at *some*  
good distance. *Id.*

The number slain on the rebels' part were *some* two  
*thousand*. *Id.*

The body passive is better wrought upon at *sometimes*  
than at others. *Id. Natural History.*

Holding of the breath doth help *somewhat* to cease  
the hiccough. *Id.*

If there be a tacit league, it is against *somewhat*  
or *somebody*: who should they be? Is it against wild

beasts? No; it is against such routs and shoals of people as have utterly degenerated from the laws of nature. *Bacon.*

The flowre of armes, Lycymnius, that somewhat aged grew. *Chapman.*

At the higher end of a creek Milbrook lurketh between two hills, a village of some eighty houses. *Carew.*

Some to the shores do fly,  
Some to the woods, or whither fear advised;  
But running from, all to destruction hye. *Daniel.*

They have no black men amongst them, except some few which dwell on the seacoast. *Heylin.*

If he had not done it when he did, somebody else might have done it for him. *Id.*

It is good that we sometimes be contradicted, and that we always bear it well; for perfect peace cannot be had in this world. *Taylor.*

We must draw in somebody, that may stand Twixt us and danger. *Denham's Sophy.*

Hopeless and forlorn  
They are returned, and somewhere live obscurely. *Denham.*

Not in the neighbouring moon, as some have dreamed. *Milton.*

The pilot of some small night-founded skiff. *Id.*  
Something yet of doubt remains. *Id.*

The pain went away upon it; but he was something discouraged by a new pain falling some days after upon his elbow on the other side. *Temple.*

Your edicts some reclaim from sins,  
But most your life and blest example wins. *Dryden.*

He writes not always of a piece, but sometimes mixes trivial things with those of greater moment: sometimes also, though not often, he runs riot, and knows not when he has said enough. *Id. Fables, Preface.*

Somewhat of his good sense will suffer in this transfusion, and much of the beauty of his thoughts will be lost. *Dryden.*

These are intrinsic difficulties arising from the text itself, as the uncertainty sometimes who are the persons he speaks to, or the opinions or practices which he has in his eye. *Locke.*

These salts have somewhat of a nitrous taste, but mix with a smatch of vitriolick. *Grew.*

Sometimes the one, and sometimes the other, may be glanced upon in these scripture descriptions. *Burnet.*

He bore away the prize, to the admiration of some hundreds. *Addison.*

The hopes that what he has must come to somebody, and that he has no heirs, have that effect, that he has every day three or four invitations. *Id. Spectator.*

Your good-natured gods they say,  
Descend some twice or thrice a day. *Prior.*

When fierce Bavar  
Did from afar the British chief behold,  
Betwixt despair and rage, and hope and pain,  
Something within his warring bosom rolled. *Id.*

Does something still, and somewhere yet remain,  
Reward or punishment? *Id.*

Compressing two prisms hard together, that their sides, which by chance were a very little convex, might somewhere touch one another, I found the place in which they touched to become absolutely transparent, as if they had there been one continued piece of glass. *Newton's Opticks.*

He that shuts his eyes against a small light, on purpose to avoid the sight of somewhat that displeases him, would, for the same reason, shut them against the sun. *Attbury.*

The force of the air upon the pulmonary artery is but small, in respect of that of the heart; but it is still something. *Arbuthnot on Aliments.*

The vesicular cells may be for receiving the arterial and nervous juices, that, by their action upon one another, they may be swelled somehow, so as to shorten the length of every fibril. *Cheyne.*

You'll say the whole world has something to do, something to talk of, something to wish for, and something to be employed about; but pray put all these somethings together, and what is the sum total but just nothing? *Pope's Letters.*

Of the dead we must speak gently; and therefore, as Mr. Dryden says somewhere, peace be to its manes. *Pope.*

Something of it arises from our infant state. *Watts.*

Still from his little he could something spare,  
To feed the hungry and to clothe the bare. *Harte.*

SOMERS (John), lord high chancellor of England, was born at Worcester in 1652. He was educated at Oxford, and afterwards entered at the Middle Temple, where he studied the law. In 1688 he was one of the counsel for the seven bishops at their trial, and argued with great learning and eloquence against the dispensing power. In the convention which met by the prince of Orange's summons, January 22d, 1689, he represented Worcester; and was one of the managers for the House of Commons, at a conference with the House of Lords upon the word abdicated. Soon after the accession of William and Mary he was appointed solicitor-general and was knighted. In 1692 he was made attorney-general, and in 1693 lord keeper of the great seal. In 1695 he proposed an expedient to prevent the clipping of the coin. In 1697 he was created lord Somers, baron of Evesham, and made lord high chancellor. In 1700 he was removed from his post of lord chancellor, and in 1701 was impeached of high crimes and misdemeanors by the House of Commons, of which he was acquitted upon trial by the House of Lords. He then retired to a studious course of life, and was chosen president of the Royal Society. In 1706 he proposed a bill for the regulation of the law; and was one of the principal managers for the union between England and Scotland. In 1708 he was made lord president of the council; from which he was removed in 1710. In the end of queen Anne's reign he became very infirm; and therefore held no other post than a seat in council, after the accession of king George I. He died of an apoplectic fit in 1716. Mr. Addison has drawn his character very beautifully in his Freeholder.

SOMERSET, a county of the United States, in Maine, bounded east by Penobscot county, south by Kennebeck county, and west by Oxford. Chief town Norridgewock. 2. A county of the United States, in New Jersey, bounded north by Morris county, east by Essex and Middlesex counties, south-east by Middlesex county, and west by Hunterdon county. Chief towns, Boundbrook and Somerset. 3. A county of the United States, in Pennsylvania, bounded north by Cambria county, east by Bedford county, south by Maryland, and west by Fayette and Westmoreland counties. 4. A county of the United States, in Maryland, bounded north by

**Delaware**, east by Worcester county, south by Pocomoke Bay, west by the Chesapeake, and north-west by Dorchester county. Chief town, Princess Anne.

SOMERSET is also the name of a borough and post-town of the United States, capital of Somerset county, Pennsylvania, and remarkable as being the most eastern town of any consequence in West Pennsylvania, and, except Hamilton, in the Ohio valley. It is the seat of justice for Somerset county, and stands near the head streams of both the Youghiogheny and Conemaugh, on the south road from Pittsburg to Bedford. The mountain valley in which this town is situated is the abode of health, and having pure though often keen air. Thirty-five miles west of Bedford, and sixty-one E.S.E. of Pittsburg. There are a great number of small townships of this name in the United States.

SOMERSETSHIRE, a maritime county of England, bounded on the north by Gloucestershire and the Bristol Channel, on the east by Wiltshire and Dorsetshire, on the south by Dorsetshire, and on the west and south-west by Devon; being sixty-eight miles in length and forty-seven in breadth, containing 1642 square statute miles, or 1,050,88 statute acres of land, and having 400,000 acres arable, and 534,500 in pasture. It is divided into the forty hundreds of Abdick and Bulstone, Andersfield, Bathforum, Bempstone, Brent and Wrington, Bruton, Cannington, Carhampton, Catash, Chew and Chewton, Crewkerne, Curry-north, Ferris-Norton, Frome, Glaston, Hampton and Claverton, Hartcliffe and Bedminster, Horethorne, Hounborough, Huntspill and Puriton, Keynsham, Kilmersden, Kingsbury, Martock, Mells and Leigh, Milverton, Petherton-north and Petherton-south, Pitney, Portbury, Somerton, Stone, Taunton, Tintinhull, Wellow, Wells-forum, Whitestone, Whitley, Willerton and Freemanners, and Winterstoke; the whole containing seven liberties; two cities, Bath and Wells (exclusive of the greater part of the city of Bristol); five boroughs, Bridgewater, Ilchester, Milbourne Port, Minehead, and Taunton; and twenty-seven market-towns, Axbridge, Bruton, Castle-Cary, Chard, Crewkerne, Dulverton, Dunster, Frome-Selwood, Glastonbury, Ilminster, Keynsham, Langport, Melverton, North-Curry, Pensford, Petherton-south, Porlock, Stogumber, Shepton-Mallet, Somerton, Stowey, Watchet, Wellington, Winsanton, Wivelcombe, Rington, and Yeovil; and 482 parishes. The amount of the assessment under the property tax in 1815 was £1,900,651, and the amount of the poor's rates in 1815 was £233,387; being at the rate of 2s. 6d. in the pound. The average scale of mortality for ten years appears to have been as one to sixty-three of the population. It sends sixteen members to parliament; is included in the western circuit, the province of Canterbury, and in the diocese of Bath and Wells.

The rivers are numerous but not large, their course being chiefly within the county. The principal is the Parret, which rising on the southern parts, flows northward, and is joined by the Ivel from the east, then by the Tone from the west, and afterwards emptying itself into the

Bristol Channel at Bridgewater Bay; the small river Ax, from the north, passes Axbridge, and falls into the Bristol Channel; the Brue rises near Bruton, and falls into the Bristol channel. The Parret, the Tone, and the Brue, are each navigable for limited distances. The only navigable canal that has been completed, is the Kennet and Avon, which unites together the two great rivers Thames and Severn. It commences near Bath, and soon enters Wiltshire. Other canals have been projected in different directions, but none of them have been prosecuted to completion; though on several of them large sums have been expended.

The most valuable branch of rural economy here is the fattening of cattle and the management of the dairy. The cheese of Cheddar has obtained great celebrity, but that made in many other parts, and frequently sold as Gloucester, is equal to any in the world. The butter in the southern division of the county is excellent, and much of it is sent to London under the denomination of Dorsetshire butter. Its next agricultural produce is cider, the universal beverage of the working classes. It is a purer and stronger liquor than the cider either of Herefordshire or Devonshire, and the consumption of it within the country is very large: some is also sent to distant parts. The abundance of natural grass is such that the farmers do not find it necessary to grow a crop of clover, or artificial grass, uniformly between two corn crops; nor is the practice of fallowing, or of introducing a rotation beginning with turnips, necessary. Without this they grow good crops of corn, and in the hundred of Taunton Dean the wheat is of the best quality. The bear and barley crops are also very good. Oats are extensively cultivated, but scarcely equal the demands of the county, and Ireland readily supplies the deficiency. A large proportion of the flax used in the manufactures is raised within the county. It is not unusual to rent land for half a year whilst a crop of flax is grown; after which it is taken again by the regular occupant, who finds the flax to be an excellent preparative for wheat. The rich loamy soils bring to maturity fine elm timber.

Of the mineral products the hills of Mendip supply coals; lead, of a quality superior to that of Derbyshire, is also found in Mendip and on the Cheddar hills; and calamine is extensively produced, and supplies the brass manufactures of Bristol. Copper is found near Stowey: manganese, bole, and red ochre, are also among the products of Mendip. Cloths of Spanish and Saxon wool are made at Frome, Shepton Mallet, and their vicinity: some common woollen goods at Ilminster, Chard, Taunton, and Wellington; and some of a coarser kind at Wivelcombe, Milvartown, Watchet, and other places. The linen goods are tickens, dowlas, and sail-cloth; these are mostly made at Yeovil, Crewkerne, Montacute, and Martock. Silk-nails are found at Bruton and Taunton, and gloves are extensively made at Yeovil. Near Wells are establishments for making fine paper; and in the vicinity of Bristol are some excellent glass-houses.

The commerce of Somersetshire passes chiefly through Bristol, but some of the woollen goods

manufactured at Taunton and Wellington are shipped from Exeter. The linen and woollen goods are also distributed through the western and Welsh counties.

The county returns four members to the House of Commons, and two from each of the following places: Bath, Wells, Taunton, Bridgewater; one for the borough of Frome; besides two for the city of Bristol, which is partly in this county, and partly in Gloucestershire, but retains an independent county jurisdiction. Ilchester, from the elections being held there, and the gaol and county-court, is usually considered the county-town, but the assizes in the spring are held at Taunton, and in the Summer at Wells and Bridgewater alternately.

SOMERTON, market-town and parish in Somerton hundred, Somersetshire, four miles east by north from Langport, and 133½ west by south from London. The town is pleasantly situated by a branch of the Parrett, on a rising ground, but the houses are mostly low, though of stone, and the streets are paved. It is of great antiquity, and was formerly the county town, giving, in fact, name to the county. It was often the residence of the West Saxon kings, who built a strong castle here, which was many years after used as a state prison. In it John, king of France, was confined, after he was made prisoner by Edward the Black Prince. The church is an ancient edifice, and near it is an excellent free-school, and a well-endowed alms-house for eight poor women. The hall in which the meetings of the justices is held is in the middle of the town. One of the county gaols is in this town, the other being at Ilchester. It is governed by a bailiff and constables, chosen annually from the inhabitants. Market on Tuesday.

SOMERVILLE (William), an English poet, the son of Robert Somerville of Edston, esq., descended of an ancient and opulent family in Warwickshire, born at Edston in 1692. He was educated at Winchester, and afterwards became fellow of New College, Oxford; as was also his brother, Dr. Somerville, afterwards rector of Adderbury in Oxfordshire. Dr. Johnson celebrates him as a poet, a country gentleman, and a useful justice of peace. He translated Voltaire's Alzira; but his work which is chiefly admired is his Chase, which is a lively and classical performance. Shenstone pays a very mixed compliment to his character in his Letters (1742—3). ‘Our old friend Somerville is dead! I did not imagine I could have been so sorry as I find myself on this occasion. I can excuse all his foibles, impute them to age and to distress of circumstances; the last of these considerations wrings my very soul to think on. For a man of high spirit, conscious of having, at least in one production, generally pleased the world, to be plagued and threatened by wretches that are low in every sense; to be forced to drink himself into pains of body, in order to get rid of pains of the mind, is a misery.’ He died in 1743.

SOMME, a Norman department of France, comprising the western part of Picardy, and bounded on the west by the English Channel, on the north by the department of the Pas de Calais.

Its area is about 2380 square miles. Population 495,000. This is, on the whole, one of the finest and most fertile of the French departments. The coast is low and sandy, but the interior consists of a level fertile loam, except towards the east, where the prolongation of a part of the Ardennes produces considerable elevations, and the corn culture gives place to plantations and pasture. Tillage and the breeding of cattle are followed here on the plan adopted in Flanders; and stall feeding is practised on a large scale. The raising of green crops is also favored by the climate. Besides corn, pasture, fruit, and vegetables, a large quantity of coleseed, rapeseed, flax, hemp, and oleaginous grains, are raised. The manufactures comprise woollens, coarse and fine linens, lawns, cambrics, soap, leather, and hardware.

SOMNAMBULISM, sleep-walking. See MEDICINE, Index; and SLEEP. We have touched upon this subject in the article SLEEP. There is but little more of an authentic description that can be added. The case of Devaud, accurately observed by the Physical Society of Lausanne, is the most singular one.

‘Once, we are told, he was observed dressing himself in perfect darkness. His clothes were on a large table, mixed with those of some other persons; he immediately perceived this, and complained of it much: at last a small light was brought, and then he dressed himself with sufficient precision. While his imagination was employed on various subjects, he heard a clock strike, which repeated at every stroke the note of the cuckoo. ‘There are cuckoos here,’ said he; and, upon being desired, he imitated the song of that bird immediately.’ Again, the reporters say, ‘if he is teased, or gently pinched, he is always sensible of it (unless he is at the time strongly impressed with some other thing), and wishes to strike the offender: however, he never attacks the person who has done the ill, but an ideal being, whom his imagination presents to him, and whom he pursues through the chamber without running against the furniture, nor can the persons whom he meets in his way divert him from the pursuit.’ Other facts impressed the observers with a belief that the sleep-walker was capable of receiving certain impressions through the medium of the senses, when they accorded with the images which his imagination was occupied in forming; but that this faculty was predominant, and only admitted those perceptions which, on the principles of association, mingled with the reverie. They inferred, too, that he was obliged to open his eyes, in order to recognize objects; but that the impression, once made, although rapidly, was vivid enough to supersede the necessity of opening them again; that is, the same objects appeared to be afterwards represented by the conceptions of his imagination, with as much force and precision as if he actually saw them. In the effort to open his eyes, however, when he wished to see an object, he could scarcely raise them a line or two, by drawing up his brows; and the iris appeared fixed, and the eye dim. He made this effort whenever any thing was presented to him, and he was told of it, always half opening his eyes with great difficulty, and then shutting them after he had taken what was of-

tered. ‘Having engaged him to write a theme,’ the committee of the Physical Society say, ‘we saw him light a candle, take pen, ink, and paper from the drawer of his table, and begin to write, while his master dictated. As he was writing, we put a thick paper before his eyes, notwithstanding which he continued to write, and to form his letters very distinctly; showing signs, however, that something incommoded him, which apparently proceeded from the obstruction which the paper gave to his respiration, being held too near his nose. An experiment was made by changing the place of the ink-standish, while he was writing. He had a light beside him, and had certified himself of the place where his ink-holder was standing by means of sight. From that time he continued to take ink with precision, without being obliged to open his eyes again: but, the ink-standish being removed, his hand returned as usual to the place where he thought it was. It must be observed that the motion of his hand was rapid, till it reached the height of the standish, and then he moved it slowly, till the pen gently touched the table, as he was seeking for the ink. He then perceived that a trick had been put upon him, and complained of it: he went in search of his ink-standish, and put it in its place.’ This experiment, they affirm, was several times repeated, and was always attended with the same circumstances. And they put the following questions respecting the inferences to be drawn from it:—‘Does not what we have here stated prove that the standish, the paper, the table, &c., are painted on his imagination in as lively a manner as if he really saw them; since he sought the real standish in the place where his imagination told him it ought to have been? Does it not prove that the same lively imagination is the cause of the most singular actions of this sleep-walker? And, lastly, does it not prove that a mere glance of his eye is sufficient to make his impressions as lively as durable?’

The following example of the somnambulistic reverie is from the life of Dr. Blacklock in Anderson’s poets, vol. xi.

‘Dr. Blacklock, one day, harassed by the censures of the populace, whereby not only his reputation but his very subsistence, was endangered, and fatigued with mental exertion, fell asleep after dinner. Some hours after, he was visited by a friend, answered his salutation, rose, and went with him into the dining-room, where some of his companions were met. He joined with two of them in a concert, singing, as usual, with taste and elegance, without missing a note, or forgetting a word. He then went to supper, and drank a glass or two of wine. His friends, however, observed him to be a little absent and inattentive: by and by he began to speak to himself, but in so slow and confused a manner as to be unintelligible. At last, being more forcibly roused, he awoke with a certain start, unconscious of all that had happened, as till then he had continued fast asleep.’ Those who wish fully to investigate this curious subject may consult Cleghorn de Somn, &c.; Hoffmann’s *Dissertatio de Somnabulisme*, in the third volume of the supplement to his works; the French *Encyclopédie*, article *Somnambulisme*; Darwin’s *Zoonomia*, vol. i. sect. xix.

**SOMNER** (William), an eminent English antiquary, born at Canterbury in 1606. His first treatise was the *Antiquities of Canterbury*, which he dedicated to archbishop Laud. He then made himself master of the Saxon language, by which he discovered that the old glossary prefixed to Sir Roger Twisden’s edition of the laws of king Henry I., printed in 1644, was erroneous in many places; he therefore added to that edition notes and observations valuable for their learning, with a very useful glossary. His *Treatise of Gavelkind* was finished about 1648, though not published till 1660. He was zealously attached to king Charles I., and in 1648 he published a poem on his sufferings and death. His skill in the Saxon tongue led him to enquire into most of the European languages ancient and modern. He assisted Dugdale and Dodsworth in compiling the *Monasticon Anglicanum*. His *Saxon Dictionary* was printed at Oxford in 1650. He died in 1669.

**SOMNIFEROUS**, *adj.* Fr. *somnifère*; Lat. *somnifer*. Causing sleep; procuring sleep; soporiferous; dormitive.

I wish for some *somniferous* potion, that might force me to sleep away the intermediate time, as it does with men in sorrow. *Walton’s Angler.*

**SOMNUS** (Lat.), in the ancient mythology, the god of sleep, was the son of Erebus and Nox, or Hell and Night (the hell of the virtuous, see *EREBUS*), and the brother of Light and Day. He was one of the infernal deities, and his palace a dark cave, where the sun never penetrated. At the entrance grew poppies and all other somniferous herbs. The god was represented as asleep on a bed of feathers, with black curtains. The Dreams stand by him; and Morpheus, as his chief minister, watches, lest any should disturb him. *Hesiod. Theog. Hom. Il. 14. &c.*

**SON, n. s.** { Sax. *rūna*; Gothic *sunus*;

**SON-IN-LAW.** { Swed. *son*; Belg. *sone*. A

**SONSHIP.** male child: male descendant; native of a country; product; a Hebraism, denoting the predominance of some particular quality; as the sons of pride, &c. See below. A son-in-law is a man married to one’s daughter: sonship, filiation; state or character of a son.

Cast out this bondwoman and her son.

*Gen. xxi. 10.*

I am the son of the wise, the son of ancient kings.

*Isaiah xix.*

If thou be the son of God, come down.

*Matt. xxvii. 40.*

And he schal go bifore in the spiryte and vertu of Helye: and he schal turne the hertis of the fadris to the sonis, and men out of beleeve to the prudence of just men: to make redy a perfyt puple to th̄ l̄rd. *Wiclid. Lu. 1.*

The fadir jugith ony man, but bath gov̄e eth doom to the sone. *Id. Jon 5*

Be plain, good son, and homely in thy drift; Riddling confession finds but riddling shrist.

*Shakespeare.*

She had a son for her cradle, ere she had a husband for her bed. *Id. King Lear.*

If virtue no benighted beauty lack, our son-in-law is far more fair than black.

*Id. Othello.*

The apostle to the Hebrews makes affliction’s not only incident but necessary to christianity, the badge and cognizance of sonship. *Decay of Piety.*

This new fav'rite  
Of heaven, this man of clay, son of despite. *Milton.*  
Our imperfections prompt our corruption, and  
loudly tell us we are sons of earth. *Browne's Vulgar Errours.*

A foreign son-in-law shall come from far,  
Whose race shall bear aloft the Latin name. *Dryden's Aeneid.*

He compares the affection of the Divine Being to  
the indulgence of a wise father, who would have his  
sons exercised with labour and pain, that they may  
gather strength. *Addison.*

Earth's tall sons, the cedar, oak, and pine,  
Their parent's undecaying strength declare. *Blackmore.*

Britain then  
Sees arts her savage sons controul. *Pope.*

SONATA, n. s. Ital. *sonata.* A tune.

He whistled a Scotch tune, and an Italian *sonata.* *Addison.*

Could Pedro, think you, make no trial  
Of a *sonata* on his viol,  
Unless he had the total gut  
Whence every string at first was cut? *Prior.*

SONATA, in music, is a piece of composition intended to be performed by instruments only; in which sense it stands opposed to cantata, or a piece designed for the voice. See CANTATA. The sonata, then, is properly a grand, a free, humorous composition, diversified with a great variety of motions and expressions, extraordinary and bold strokes, figures, &c. And all this purely according to the fancy of the composer; who, without confining himself to any general rules of counterpoint, or to any fixed number or measure, gives a loose to his genius, and runs from one mode, measure, &c., to another, as he thinks fit. This species of composition had its rise about the middle of the seventeenth century; those who have most excelled in it were Bassani and Correlli. See MUSIC.

SONCHIS, an Egyptian priest, contemporary with Solon, whom he instructed in the traditions, mysteries, and learning, of Egypt.

SONCHUS, sow-thistle, in botany, a genus of plants belonging to the class of syngenesia, and to the order of polygamia *aqualis*; and in the natural system ranged under the forty-ninth order, compositæ. The receptacle is naked; the calyx is imbricated, bellying, and conical; the down of the seed is simple, sessile, and very soft; the seed is oval and pointed. There are thirteen species; viz.

1. S. alpinus; 2. ardensis; 3. Caudensis; 4. Floridanus; 5. fruticosus; 6. maritimus; 7. oleraceus; 8. palustris; 9. plumieri; 10. Sibiricus; 11. Tartaricus; 12. tenerimus; 13. tuberosus. Of these the following are natives of Britain:—  
1. S. alpinus, blue-flowered sow-thistle. The stem is erect, purplish, branched, or simple, from three to six feet high: the leaves are large, smooth, and sinuated; the extreme segment large and triangular: the flowers are blue, and grow on hairy viscid pedicels, in long spikes: the calyx is brown. This species is found in Northumberland.

2. S. ardensis, corn sow-thistle. The leaves are alternate, runcinate, and heart-shaped at the base; the root creeps under ground; the stem is three or four feet high, and branched at the

top. It grows in corn-fields, and flowers in August.

3. S. oleraceus, common sow-thistle. The stalk is succulent, pistular, and a cubit high or more; the leaves are broad, embracing the stem, generally deeply sinuated, smooth or prickly at the edges; the flowers are of a pale yellow, numerous in a kind of umbel, and terminal; the calyx is smooth. It is frequent in waste places and cultivated grounds.

4. S. palustris, marsh sow-thistle. The stem is erect, from six to ten feet high, branched and hairy towards the top; the leaves are firm, broad, half pinnated, serrated, and sharp pointed; the lower ones sagittate at the base; the flowers are of a deep yellow, large and dispersed on the tops of the branches: the calyx is rough. It is frequent in marshes, and flowers in July or August.

SONG, n. s. } Sax. *ferungen.* Any  
SONGISH, adj. } thing modulated in the ut-  
SONGSTER, n. s. } terance; a poem; lay;  
SONG'STRESS. } strain: an old song is a  
trifle: songish, containing or consisting of song,  
a foolish coinage of Dryden's: a songster and  
songstress, respectively, a male and female  
singer.

Pardon, goddess of the night  
Those that slew thy virgin knight;  
For the which, with songs of woe,  
Round about his tomb they go! *Shakspeare.*

There we awhile will rest;  
Our next ensuing song to wondrous things addrest. *Drayton.*

The pretty songsters of the spring, with their various notes, did seem to welcome him as he passed. *Howel.*

Noise other than the sound of dance and song. *Milton.*

Still govern thou my song,  
Urania, and fit audience find, though few. *Id.*  
I do not intend to be thus put off with an old song. *More.*

He first thinks fit no sonnetter advance  
His censure farther than the song or dance. *Dryden.*

The lark, the messenger of day,  
Saluted in her song the morning grey. *Id.*

The songish part must abound in the softness and variety of numbers, its intention being to please the hearing. *Id.*

Either songster holding out their throats,  
And folding up their wings, renewed their notes. *Id.*

Some songsters can no more sing in any chamber  
but their own, than some clerks read in any book  
but their own. *L'Estrange.*

A hopeful youth, newly advanced to great honour,  
was forced by a cobler to renounce all for an old  
song. *Addison.*

Names memorable long,  
If there be force in virtue or in song. *Pope.*  
Through the soft silence of the listening night  
The sober-suited songstress trills her lay. *Thomson's Summer.*

Song, in music is applied in general to a single piece of music, whether contrived for the voice or an instrument. In poetry it is considered as a short composition, consisting of easy and natural verses, set to a tune in order to be sung.

Le Brun defines a modern song, to be either

a soft and amorous, or a brisk and Bacchic thought, expressed in few words. But this is to restrain it to too narrow bounds; for we have devout songs, satirical songs, and panegyrical songs. But, be the song what it will, the verses are to be easy, natural, and flowing; and are to contain a certain harmony, which neither shocks the reason nor the ear; and which unites poetry and music agreeably together.

Anciently, the only way of preserving the memory of great and noble actions was by recording them in songs; and, in America, there are tribes who still keep their whole history in songs. At all times, and in all places, songs have afforded amusement and consolation to mankind: every passion of the human breast has been vented in song; and the most savage as well as civilised inhabitants of the earth have encouraged these effusions. The natives of New Zealand, who seem to live as nearly in a state of nature as any animals that are merely gregarious, have their songs, and their improvisatori; and the ancient Greeks, during every period of their history and refinement, had their scolia for almost every circumstance and occasion incident to society.

Among the ancient Romans singing was so common as to become proverbial. Phaedria, in the *Phormio* of Terence, begs Dorio to hear him, he has but one word to offer; when Dorio tells him he is always singing the same song. Horace speaks of the affectation among the singers of his time, never to sing when they are intreated, or to desist if no one wishes to hear them. And some idea of the cultivated state of music in Gaul, so early as the fifth century, may be acquired from a passage in one of the epistles of Sidonius Apollinaris, who, in his character of king Theodoric the Goth, says that 'this prince was more delighted with the sweet and soothing sounds of a single instrument, which calmed his mind, and flattered his ear by its softness, than with hydraulic organs, or the noise and clangor of many voices and instruments in concert.'

The origin of songs and the formation of the language of every country are nearly coeval.

In the frequent revolutions and struggles for empire, during the dark ages, the Roman language becoming debased and corrupted, while new tongues were forming, the art of rhyming, or unisonous terminations of verses, stole into poetical composition, and Leonine verses, supposed to have been so called from a pope or monk Leo, their author, in the seventh century, are by some thought the first attempt at rhyme: while others imagine the hymn to St. John the Baptist, by Paul Diaconus, written about the latter end of the eighth century, to be not only rendered memorable by Guido's scale, but by having been the model of all other monkish rhymes in Latin.

Gravina thinks it as absurd to ascribe the invention of rhyme to any one writer, as to attribute to an individual the propagation of the plague, which is caused by the universal contagion of the air. The Arabs had rhyme, according to Calmet, before the time of Mahomet, who died 632, and in the second century used a kind of poetry in measures similar to the Greek, and set to music. See RHYME.

While the new languages were unsettled, and but partially known, even in the single kingdom or province where they were forming, it was not uncommon to write half a poem in Latin and half in a vulgar tongue. Indeed Dante has left a poem in three languages, Latin, Provençal, and Italian; and Rambaud de Vachieras, a Provençal poet, in five.

In the eleventh century the Troubadours, honored by the patronage and encouragement of the count of Poitou, and many other powerful princes and barons, had successfully cultivated poetry and music. At the courts of these munificent patrons they were treated with the greatest consideration and respect. The ladies, whose charms they celebrated, gave them the most flattering reception; and sometimes disdained not even to listen with compassion to tales of tenderness, and descriptions of the havoc which the irresistible charms of these sublunary divinities of chivalry had made in their hearts. The success of a few inspired the rest with hope, and excited exertions in the exercise of their art, which impelled them towards perfection with a rapidity that nothing but the united force of emulation and emolument could occasion.

These founders of modern versification constructed their poems upon plans of their own invention; and as all classical authority was laid aside, either through ignorance or design, each individual gave unlimited indulgence to fancy in the subject, form, and species of his composition. It does not appear, during the cultivation and favor of Provençal literature, that any one Troubadour so far outstript his brethren in the approaches he made towards perfection as to be considered as a model for his successors: we find, though military prowess, hospitality, Gothic gallantry, and a rage for feasts and revelry prevailed, that taste, refinement, and elegance, were never attained during this period, either in public or private amusements. The want of originality of composition is frequently lamented when license is repressed by laws, and the wild effusions of an ardent imagination are bounded by authority; but the productions that have been preserved of the Provençal bards, which may be called the offspring of writers in a state of nature, seem to prove the necessity of rule, order, and example, even in the liberal arts as well as the government of a free state. For the progress of taste must ever be impeded by the ignorance and caprice of those who cultivate an art without science or principles.

For nearly two centuries after Guido's arrangement of the scale, no remnants or records of secular music can be found except those of the Troubadours, or Provençal poets: and though in the simple tunes which have been preserved of these bards no time is marked, and but little variety of notation appears, yet it is not difficult to discover in them germs of the future melodies, as well as poetry, of France and Italy. Unluckily the poetry and music of the Troubadours of Provence were not for a long time called into notice by writers possessed of those blandishments of style or manner which fascinate, and render whatever subject they treat interest-

ing to the generality of readers, Indeed the period of Provençal poetry is most interesting to literature, and the melody to which it was sung is a subject of curious enquiry; for it is generally allowed that the Troubadours, by singing and writing in a new tongue, occasioned a revolution not only in literature but the human mind. And, as almost every species of Italian poetry is derived from the Provençals, so air, the most captivating part of secular vocal melody, seems to have had the same origin. At least the most ancient strains that have been spared by time, were such as are set to the songs of the Troubadours.

Songs seem to belong by universal consent to the language of Italy. The ancient Romans were no great songsters; and by what degrees the Latin language became Italian would be a tedious and difficult enquiry. But that it was most importantly smoothed and polished by Dante, Petrarcha, and Boccaccio is clear: the Italian language has been allowed to be more musical in itself when merely spoken with purity, than any other in Europe.

Maffei allows the Provençal, French, Spanish, and Italian languages, to be descendants from the Latin, but denies that the ancient inhabitants of Italy adopted any words from the Goths or Huns. The genius of the German, Francic, or Teutonic language, which was spoken by the Lombards, was so diametrically opposite to that of the Italians, that it seems incredible there should have been any exchange or union of dialects, he thinks, between them: the one being as remarkable for its numerous consonants and harsh terminations, as the other for its open vowels and mellifluous endings. As it is the opinion of this critic that the Romans had always a vulgar dialect, less grammatical and elegant than that of the senate and of books, he supposes the French, Spanish, and Italian languages to have been different modifications of this rustic, plebeian dialect. But it is as difficult to assign a reason for all these daughters of one common mother being so dissimilar, as it is to account for the little resemblance that is frequently found between other children of the same parents. And why the French language should have so many nasal endings, the Spanish so many sibilating, and the Italian alone have none but vocal terminations, can only have been occasioned by some particular and radical tendency in the vulgar and plebeian language of each country from very high antiquity.

While the modern language was forming, no music seems to have been cultivated in Italy, except the canto fermo of the church; and, unluckily, no written melody can be found to the Canzoni of Dante, the sonnets of Petrarcha, or the songs of Boccaccio, the three great founders of the Italian tongue. Yet these, we are told, were all set to some kind of music or other, and sung even in the streets. See the biographical articles of these lyric poets, particularly that of Boccaccio; whose Decamerone has always been regarded as a natural and faithful delineation of the manners and customs of Italy, at the time when it was written.

Boccaccio says, at the end of his *prima giornata*,

or first day, that ‘after supper the instruments were called in, when the queen for the day ordained that there should be a dance; and, after one had been led off by Lauretta, Emilia sung a song, in which she was accompanied by Dion, a gentleman of the party, on the lute.’ There is nothing new or extraordinary in this quotation. But in Italy, whence all the liberal arts have travelled to the rest of Europe, it is curious to know in what rank music was held at this early period. And here a writer, justly celebrated for the exactness with which he has described the customs of his contemporaries in all situations, tells us, that in an assembly of persons of birth and education, who passed ten days together during summer in a constant succession of innocent amusements, each evening was closed by dance and song; in which the whole company, consisting of seven ladies and three gentlemen of different characters and acquirements, were able to perform their parts. When we are told that the lady who sang was accompanied by the lute, we know not of what this accompaniment consisted, whether it only fortified the voice-part by playing the same melody, or more elaborately furnished a base and a different treble, arising out of its harmony.

On the second day we find that, one of the company leading off a carol, a song was sung by another, which was answered in a kind of chorus by the rest. At the close of the second day Boccaccio says, that after the song, of which he gives the words, had been performed, many others were sung, and many dances danced to different tunes, by which we may gather that besides carols and ballads, the singing of which marked the steps of a dance, there were at this time songs without dances, and tunes without songs.

Whoever reads the history of the Cambro-Britons will find innumerable instances of the reverence which they paid to their poet-musicians, the bards both of Pagan and Christian times; and songs of very high antiquity have been preserved in the Welsh language, though not all the tunes to which they were sung.

We are told (*Miscel. Antiq. vol. ii. p. 8*) that sir Thomas Wyatt was the first who introduced Italian numbers into English versification. This may have contributed to improve our lyric poetry; but to confess the truth, from the few parts of the first class throughout Europe, who, at the beginning of the sixteenth century, condescended to write madrigals and songs for music, it seems that the rage for canon, fugue, multiplied parts, and dissimilar melodies, moving at the same time, had so much employed the composers, and weaned the attention of the hearers of these learned, or, as some call them, Gothic contrivances, from poetry, that the words of a song seem to have been only a pretence for singing; and, as the poets of the two or three last centuries were in little want of music, musicians, in their turn, manifested as little respect for poetry; for, in these elaborate compositions, the words are rendered utterly unintelligible by repetitions of particular members of a verse; by each part singing different words at the same time; and by an utter inattention to accent. In the Essays

on *Song-writing*, published with a collection of English songs, there are many judicious and excellent reflections; and the songs are admirably selected, and form the best collection in our language.

*The Song of Birds* is defined by the honorable Daines Barrington to be a succession of three or more different notes, which are continued without interruption, during the same interval, with a musical bar of four crotchetts in an adagio movement, or whilst a pendulum swings four seconds. It is affirmed that the notes of birds are no more innate than language in man, and that they depend upon imitation, as far as their organs will enable them to imitate the sounds which they have frequent opportunities of hearing: and their adhering so steadily, even in a wild state, to the same song, is owing to the nestling attending only to the instruction of the parent bird, whilst they disregard the notes of all others that may be singing round them. Birds in a wild state do not commonly sing above ten weeks in the year, whereas birds that have plenty of food in a cage sing the greatest part of the year: the female of no species of birds ever sings. This is a wise provision, because her song would discover her nest. In the same manner we may account for her inferiority in plumage. The faculty of singing is confined to the cock birds; and accordingly Mr. Hunter, in dissecting birds of several species, found the muscles of the larynx to be stronger in the nightingale than in any other bird of the same size; and, in all those instances where he dissected both cock and hen, the same muscles were stronger in the cock. It is an observation as ancient as the time of Pliny that a capon does not crow. Some ascribe the singing of the cock in the spring solely to the motive of pleasing his mate during incubation: others, who allow that it is partly for this end, believe it is partly owing to another cause, viz. the great abundance of plants and insects in spring, which are the proper food of singing birds at that time of the year, as well as seeds. Mr. Barrington remarks that there is no instance of any singing bird which exceeds our blackbird in size; and this, he supposes, may arise from the difficulty of its concealing itself, if it called the attention of its enemies, not only by its bulk, but by the proportionable loudness of its notes. He farther observes that some passages of the song in a few kinds of birds correspond with the intervals of our musical scale, of which the cuckoo is a striking and known instance; but the greater part of their song cannot be reduced to a musical scale; partly, because the rapidity is often so great, and it is also so uncertain when they may stop, that we cannot reduce the passages to form a musical bar in any time whatsoever; partly also, because the pitch of most birds is considerably higher than the most shrill notes of those instruments which have the greatest compass; and principally because the intervals used by birds are commonly so minute that we cannot judge of them from the more gross intervals into which we divide our musical octave. This writer apprehends that all birds sing in the same key; and found by a nightingale, as well as a robin

which was educated under him, that the notes reducible to our intervals of the octave were always precisely the same. Most people, who have not attended to the notes of birds, suppose that every species sing exactly the same notes and passages: but this is not true, though there is a general resemblance. Thus the London bird-catchers prefer the song of the Kentish goldfinches and Essex chaffinches; and some of the nightingale fanciers prefer a Surry bird to those of Middlesex. Of all singing birds the song of the nightingale has been most universally admired: and its superiority consists in the following particulars: its tone is much more mellow than that of any other bird, though at the same time, by a proper exertion of its musical powers, it can be very brilliant. Another superiority is its continuance of song without a pause, which is sometimes twenty seconds; and when respiration becomes necessary it takes it with as much judgment as an opera singer. The sky-lark in this particular, as well as in compass and variety, is only second to the nightingale. The nightingale also sings with judgment and taste. Mr. Barrington says that his nightingale began softly like the ancient orators, reserving its breath to swell certain notes, which thus had a most astonishing effect. He adds that the notes of birds, which are annually imported from Asia, Africa, and America, both singly and in concert, are not to be compared to those of European birds. He also constructed the following table to exhibit the comparative merits of the British singing birds, wherein twenty is the point of perfection.

	Mellow ness of tone.	Sprightly notes.	Plaintive notes.	Compass.	Execution.
Nightingale . . .	19	14	19	19	19
Sky-lark . . .	4	19	4	18	18
Wood-lark . . .	18	4	17	12	8
Tit-lark . . .	12	12	12	12	12
Linnet . . .	12	16	12	16	18
Goldfinch . . .	4	19	4	12	12
Chaffinch . . .	4	12	4	8	8
Greenfinch . . .	4	4	4	4	6
Hedge-sparrow .	6	0	6	4	4
Aberdavine or siskin . . .	2	4	0	4	4
Red-poll . . .	0	4	0	4	4
Thrush . . .	4	4	4	4	4
Blackbird . . .	4	4	0	2	2
Robin . . .	6	16	12	12	12
Wren . . .	0	12	0	4	4
Reed-sparrow .	0	4	0	2	2
Black-cap or Nor- folk mock night- ingale	14	12	12	14	14

*SONG OF SOLOMON.* See *SCRIPTURE*. It is surprising that some, who pretend to be Christians, consider this poem as merely an epithalamium, composed for Solomon's marriage with the princess of Egypt. Had not the ancient Jews, as well as modern Christians, considered it as a

divine allegory, representing the union of the Messiah with his church, it would never have found a place in the sacred canon; and our Saviour himself, when on earth, would have exclaimed against it, and denounced it as he did the corrupt traditions of the Pharisees. His frequent censures of these traditions, and his general approbation of the Old Testament Scriptures, by frequently quoting them without any censure, afford us the most decisive authority and security of trusting to them as genuine, and holding them sacred.

**SONIFEROUS**, *adj.* Lat. *sonus* and *fero*.

**SONORIF'IC**, } Giving or bringing  
**SONO'ROUS**, } sound : producing

**SONO'ROUSLY**, *adv.* } sound : sonorous is

**SONO'ROUSNESS**. *n. s.* } loud sounding : the  
adverb and noun substantive corresponding.

All the while

*Sonorous* metal blowing martial sounds ;  
At which the universal host up sent  
A shout that tore hell's concave.

*Milton's Paradise Lost.*

Enquiring of a maker of viols and lutes of what age he thought lutes ought to be, to attain their full and best seasoning for *sonorousness*, he replied, That in some twenty years would be requisite, and in others forty. *Boyle.*

The Italian opera, amidst all the meanness and familiarity of the thoughts, has something beautiful and *sonorous* in the expression. *Addison on Italy.*

The vowels are *sonorous*. *Dryden.*

This will appear, let the subject matter of sounds be what it will ; either the atmosphere or the ethereal part thereof, or *soniferous* particles of bodies.

*Derham.*

If he should ask me why a clock strikes, and points to the hour ; and I should say, it is by an indicating form and *sonorific* quality, this would be unsatisfactory. *Watts's Logick.*

**SONNA**, a book of the Mahometan traditions, which the orthodox of the mussulmans are required to believe.

**SONNERATIA**, in botany, a genus of plants belonging to the class of icosandria, and to the order of monogynia : CAL. is cut into six segments ; the petals are six : CAPS. multilocular and succulent ; and the cells contain many seeds. The only species is, *S. acida*.

**SON'NET**, *n. s.* } Fr. *sonnet* ; Ital. *sonnetto*.

**SONNETTEER'**. } A short poem, of which the rhymes are adjusted by a particular rule. It has not been used by any man of eminence since Milton, according to Dr. Johnson ; but this will be doubted at the present day : a sonnetteer is a writer of sonnets.

Let us into the city presently,  
To sort some gentlemen well skilled in musick ;  
I have a *sonnet* that will serve the turn. *Shakspeare.*

Assist me, some extemporal god of rhyme ; for I am sure I shall turn *sonnetteer*.

*Id. Love's Labour Lost*

There are as many kinds of gardening as of poetry : your makers of parterres and flower-gardens are epigrammatists and *sonnetteers* in this art.

*Spectator.*

What woful stuff this madrigal would be,  
In some starv'd hackney *sonnetteer* or me !

But let a lord once own the happy lines,  
How the wit brightens ! how the style refines !

*Popæ.*

**The SONNET**, in poetry, must contain fourteen verses, viz. two stanzas or measures of four verses each, and two of three, the first eight verses being all in three rhymes.

**SONNINI DE MANONCOURT** (Charles Nicholas Sigisbert), a modern French traveller and naturalist, was born at Luneville, February 1st, 1751. He was the son of a gentleman of Roman descent, who was counsellor and treasurer to Stanislaus I. of Poland, and studied under the Jesuits at Pont-à-Mousson. Before he was sixteen he received the degree of doctor in philosophy ; but, being designed for the magistracy, he went to Strasbourg as a student of law. In 1768 he was admitted an advocate of the court of Nancy. Being of an active disposition, he afterwards relinquished the law for the army, and was in 1772 sent to Cayenne. Previously to this he had been acquainted with Buffon. He now travelled over various parts of Guiana, and, after a voyage made to the western coast of Africa, returned to France in 1775, with a collection of birds for the cabinet of natural history. He passed part of the years 1776 and 1777 at Montbard, where he drew up for Buffon that part of his Natural History which relates to foreign birds. In 1779 he went to Greece and Egypt, and returning home the following year, employed himself in the cultivation of science till the commencement of the Revolution. For some time he was administrator of the department of La Meurthe ; but was imprisoned during the reign of terror. After this he went to Paris, and published an account of his travels in Greece and Egypt ; and occupied himself in other literary undertakings. Under the consular and imperial governments he was unable to obtain any office notwithstanding the patronage of Lucien Buonaparte, who in vain endeavoured to overcome the prepossessions of Napoleon against Sonnini, on account of his remarks on the Egyptian expedition. In 1805 he was director of the college of Vienne, which however he was soon after forced to resign. He had subsequently a prospect of an establishment in Moldavia ; but was again destined to meet with disappointment ; and, after travelling thither, returned to Paris in December 1811. His death took place there May 29th, 1812. His chief works are *Voyage dans la Haute et Basse Egypt*, 1799, 6 vols 8vo. ; *Voyage en Grèce et en Turquie*, 1801, 2 vols. 8vo. ; besides which he published the seventh edition of the Natural History of Buffon in 127 vols. 8vo. ; assisted in the *Dictionnaire d'Histoire Naturelle*, in 24 vols. 8vo. ; and was conductor of the *Bibliothèque Physico-économique*. The Egyptian travels of Sonnini were translated into English by Dr. Henry Hunter, 1799, 3 vols. 8vo. ; and his *Travels in Greece* appeared in an English dress, 1801, 2 vols. 8vo.

**SONNITES**, among the Mahometans, an appellation given to the orthodox mussulmans or true believers ; in opposition to the several heretical sects, particularly the Shiites or followers of Ali. See *SHIITES*.

**SONORA**, an intendancy or province of Mexico, very thinly peopled, and extending along the gulf of California, for more than 280 leagues or

from the bay of Bayona, or the Rio del Rosaria, to the mouth of the Rio Colorado. The breadth is by no means uniform. From the tropic of Cancer to 27°, it scarcely exceeds fifty leagues; but farther north, towards the Rio Gila, it increases so considerably that on the parallel of Arispe it is more than 128 leagues.

This intendancy of Sonora comprehends the three provinces of Cinaloa, Ostimury, and Sonora Proper. The first extends from the Rio del Rosaria to the Rio del Fuerto; the second from the Rio del Fuerto to the Rio del Mayo; and the province of Sonora includes all the northern extremity of the intendancy. The intendancy is bounded on the west by the sea, on the south by the intendancy of Guadalaxara, and on the east by a very uncultivated part of New Biscay. Its northern limits are very uncertain. The villages de la Pimeria Alta are separated from the banks of the Rio Gila, by a region inhabited by independent Indians, of which neither the soldiers stationed on the military fort in that quarter, nor the monks of the neighbouring missions, have been hitherto able to make any conquest.

The three most considerable rivers are the Mayo, Culiacun, and Yaqui or Sonora; chief town Arispe.

SOODERA, or Sooders, in Indian mythology and polity, the fourth caste, or the lowest class of the people. See GENTOOS and HINDOOS. The Parias are the lowest class of the Sooders: but there is still a more degraded class of the Parias, called Seriperes, who are miserably despised. See PARIAS. What monstrous distinctions human pride has invented in all countries!

SOOLOO ISLES, a group of islands which extend in a north-east and south-west direction, from the north-eastern extremity of Borneo to the western extremity of Magindano, and are comprehended between 4° and 7° N. lat. There are several good harbours among them, particularly at Bewabewa, Tavitave, Tappool, Secassee, between Boobooan, and Tappeautana, south of Basselan. The harbour before Bewan, the Sooloo capital, is not good, except during the south-west monsoon. The island of Sooloo, from which the rest are named, is situated in long. 119° E. from Greenwich, and lat. 6° N. It is thirty miles long, twelve broad, and is said to contain 60,000 inhabitants.

Lying midway between Borneo and Magindano, this island affords a fine prospect from the sea, on every side, and the hills on it not being very high, nor consequently the clouds stopped by them, it has no certain rainy season. It enjoys a perpetual summer. Up the country it is cool, especially under the shade of the teak trees, which are numerous. There is no such difference in the wetness of the seasons, or monsoons, as on continents or very large islands; but the south-west monsoon brings most rain. Much falls at the change of the monsoons, especially the autumnal. The capital of the island, Bewan, or as others call it Sooloo or Soong, is on the north-west coast. It is of considerable size; the houses are built after the manner of the Malays, elevated about four feet from the ground with bamboos, of which the floors are also made. It contains

about 6000 inhabitants. The island being small, for its number of inhabitants, they study agriculture more than do those of the adjacent islands. The Sooloos plant rice; but the crop cannot be depended on, as they are not sure of rain. They therefore cultivate many roots, the Spanish or sweet potato, the clody or St. Hilano yam, the China yam, both red and white; sending to Mindano for what rice they consume. They have great variety of fine tropical fruits; their oranges are full as good as those of China. They have also a variety of the fruit called jack or nanka, durians, a kind of large custard apple named madang, mangoes, mangustines, rambustines, and a fruit called bolona, like a large plum or mango, white inside. They enjoy also, in great abundance, an innocent and delicious fruit, called lancey. The Sooloos having great connexion with China, they have learned the art of ingrafting and improving their fruits, while the fruits at Magindano have remained indifferent. They have a very good breed of horses, which they train to trot fast, seldom suffering them to gallop, and abundance of diminutive cocatoes and small green parrots. There is no spice tree but the cinnamon. Here are wild elephants, which seem to avoid meeting with horned cattle; though not shy of horses. Sooloo has spotted deer, abundance of goats and black cattle (but the people seldom milk their cows), and of wild hogs. After harvest the Sooloos hunt the elephants and hogs. Sooloo formerly was visited by vessels from Japan, Java, Sumatra, Ceylon, and the coast of Coromandel, with valuable cargoes. At present two Chinese junks arrive annually from Amoy. Their cargoes consist of iron articles, of brass salvers, sugar candy, silk, black nankeen, white linen of a strong fabric, kangans, quallis, a thin iron pan three feet in diameter, China-ware, flowered silks, besides tea, cutlery, and other hardware, brass wire, gongs, beads of all colors, little swan shot, fireworks, &c. &c. In return they bring back to China biche de mer, black and white, wax, pearl, oyster-shells, birds' nests, and tortoise-shell; also agar, a sea weed used as gum or glue, and many other articles, such as Caroang oil, clove bark, black wood, ratans, sago, various barks for dyeing, cassia, pepper, native camphire, sandal-wood, curious shells for grottoes, pearls, and spices. Country ships from India occasionally visit these islands, import cutlery, brasier, cloth, gunpowder, glass-ware, guns of various sizes, hardware, iron in bars, ironmongery, looking-glasses, opium, piece goods, saltpetre, shot of all sorts, swords, tin-ware, tobacco, sugar, vermillion, and watches.

From the north-east coast of Borneo, the inhabitants import sago, biche de mer, cowries, and tortoise-shell. From Magindano they receive rice, for which they usually pay with Chinese goods. The Bugresses also trade with these islands.

At the Sooloo islands is a famous pearl fishery, a source both of wealth and of maritime power. The dredges for the oyster are generally made of bamboo, very slight, and sunk with a stone. The large pearls are the property of the nobility on whose estates they are found; they also extend their claim to the pearls found on the banks, as well as on the dry land. The Chinese mer-

chants, however, contrive, by their underhand dealing, to purchase from the fishermen pearls of great value.

The sovereignty of the island descends to the eldest son of the sultan; but the government is partly monarchical and partly aristocratical. The legislative power resides in an assembly composed of fifteen dattoos or nobles, and of the sultan, who has two votes. The heir apparent has also two votes, if he sides with the sultan; but, if he takes part against him, he has only one. There are two representatives of the people, called Manteries, like the military tribunes of the Romans. The common people, it is said, enjoy great freedom; but the vassals are often used in a tyrannical manner. The manners of the nobles are remarkably dissolute. The Sooloos seldom go in their own vessels to foreign parts, except on predatory excursions to make slaves among the Philippines. They depend chiefly on the lance, sword, and dagger, at the use of which they are very dexterous; and, being of a martial disposition, at an early period they had subdued not only all the adjacent small isles, but a great part of Borneo. The men generally go dressed in white waistcoats buttoned down to the waist, and white breeches. The ladies wear a fine white waistcoat fitted close, and a petticoat over drawers. The Sooloos assert that their island once formed part of an ancient Bornean empire, founded by the Chinese. On the other hand, the inhabitants of the island of Magindano assert, that the Sooloos were formerly subject to them. They have been accustomed to carry on an unceasing warfare with the Spanish colonies planted in the Philippines. Prior to the year 1746 the Spaniards attacked them with a fleet of thirty ships, and obtained possession of Bewan, the capital. In 1775 they attacked a settlement belonging to the East India Company, on the island of Balambangan, and drove the settlers on board their vessels. They are in the practice of attacking and plundering the vessels which visit them.

*SOON, adv.* { Sax. *jona*; Goth. *sun*. Early;

{ before long time be past; shortly after any assigned or supposed time; readily; willingly: used as an adjective by Sidney and others: hence the adverb *soonly*; speedily.

How is it that you are come so *soon* to-day?

*Ex. ii. 18.*

As soon as he came nigh unto the camp, he saw the calf and the dance. *Ex. xxxii: 19.*

Do this, that I may be restored to you the *sooner*.

*Heb. xiii.*

He hath preserved Argaius alive, under pretence of having him publicly executed after these wars, of which they hope for a *soon* and prosperous issue.

*Sidney.*

O boy! thy father gave thee life too *soon*,  
And hath bereft thee of thy life too late.

*Shakespeare. Henry VI.*

The earlier stayeth for the later, and not the later cometh *sooner*. *Bacon's Natural History.*

A mason meets with a stone that wants no cutting, and, *soonly* approving it, places it in his work.

*More.*

Nor did they not perceive their evil plight,  
Yet to their general's voice they *soon* obeyed.

*Milton.*

You must obey me, *soon* or late;  
Why should you vainly struggle with your fate?

*Dryden.*

Nor was his virtue poisoned, *soon* as born,

*Id.*

I would as *soon* see a river winding through woods  
and meadows, as when it is tossed up in so many  
whimsical figures at Versailles.

*Addison's Guardian.*

Feasts and business, and pleasures, and enjoyments, seem great things to us, whilst we think of nothing else; but, as *soon* as we add death to them, they all sink into an equal littleness. *Law.*

SOONDA, a district and town of Hindostan, in the province of North Canara, situated between 14° and 15° N. lat. Formerly the country was well cultivated, and produced fine timber and pepper: but it was laid waste by Hyder Aly in 1763; on which occasion the rajah made over to the Portuguese all the country between the sea and the mountains, for a stipulated pension. In 1799 the Soonda district became the property of the British.

SOONTABURDAR, in the East Indies, an attendant who carries a silver bludgeon in his hand about two or three feet long, and runs before the palanquin. He is inferior to the chubdar; the propriety of an Indian newaury requiring two soontaburdars for every chubdar in the train. The chubdar proclaims the approach of visitors, &c. He generally carries a large silver staff, about five feet long, in his hands; and among the nabobs he proclaims their praises aloud as he runs before their palanquins!

SOOSOOHOONAN, a district of Java, on the south side of the island, formerly extending to the north coast, and including the territories of Cheribon, and the greatest part of the island, under the title of the empire of Java; but it is much fallen from its ancient grandeur.

*SOOT, n.s.* { Sax. *rot*; Island. *soot*.  
*SOOT'ED, adj.* Condensed or embodied

*SOOTY, adj. & v. n.* { smoke: the adjectives both signify covered with or abounding in soot: and Chapman uses sooty for to make black with soot.

Soot, though thin spread in a field, is a very good compost. *Bacon.*

Then (for his own weeds) shirt and coat all rent,  
Tanned and all sooted with noisome smoke  
She put him on; and over all a cloke. *Chapman.*

There may be some chemical way so to defecate this oil, that it shall not spend into a sooty matter. *Wilkins.*

If the fire be not kept within the tunnel of the chimney, and some appointed to sweep down the soot, the house will be in danger of burning. *Howel.*

Oft they assayed,  
Hunger and thirst constraining; drugged as oft  
With hateflest disrelish, writhed their jaws,  
With soot and cinders filled.

*Milton's Paradise Lost.*

All the grisly legions that troop  
Under the sooty flag of Acheron;  
Harpies and Hydras, and all monstrous forms.

*Milton.*

Our household gods, that droop upon our hearths,  
Each from his venerable face shall brush  
The Macedonian soot, and shine again.

*Dryden's Cleomences*

The land was *sooted* before.

*Mortimer.*

Swift on his *sooty* pinions flits the gnome,  
And in a vapour reached the gloomy dome. *Pope.*

Soot is a volatile matter arising from wood and other fuel along with the smoke; or rather it is the smoke itself condensed and gathered to the sides of the chimney. Though once volatile, however, soot cannot be again resolved into vapor; but, if distilled by a strong fire, yields a volatile alkali and empyreumatic oil, a considerable quantity of fixed matter remaining at the bottom of the distilling vessel. If burnt, in an open fire, it flames with a thick smoke, whence other soot is produced. It is used as a material for making sal ammoniac, and as a manure. See *CHEMISTRY*, Index.

Mr. Donaldson observes that this useful manure can be obtained in considerable quantities only from great cities, or large manufacturing towns. The price in London, whence great quantities are carried to the adjacent districts, is 8*d.* the bushel. The ordinary allowance is from twenty-five to thirty-five bushels an acre. Soot is used in many parts of England, as Middlesex, Buckingham, Gloucester, Wilts, Lancashire, Yorkshire, &c. The mode of application is chiefly as top-dressings for young clover, sainfoin, and old worn-out meadows. The best season for laying it on is in February or March. It is carefully spread over the field with the hand, and always succeeds best, if rain immediately ensues.

Mr. Marshall recommends its being sown before rain, when a shower washes it in, and will be of obvious service; but that if it lie on the surface long, without rain, there will be no benefit derived from it. A rich soil wants no soot, but a soil much out of heart wants forty or fifty bushels. In his *Rural Economy* of Norfolk, he says, that the time of sowing it over the land is considered as very material. If it be sown early, and the frost catch it, its strength is thereby lowered; if late, and no rain falls to wash it in, it is thought to be rather injurious than beneficial to the crop of wheat. And it is not, in any case, found of much, if any, service to the succeeding crop of barley. The method of sowing it is extremely simple; and, in the only instance he saw, the sowing of soot practised there was very complete. A favorable opportunity being embraced, when the wind blew gently, and in the direction, or nearly in the same direction, as the lands or ridges lie; the same waggon which brought it from Norwich, and which, until the opportunity offered, had stood safe under cover, was drawn in a furrow against the wind; while a man, standing on the outside of the waggon, spread the soot, with a shovel, several yards wide on either side of him; the height of his situation at once enabling him to spread it wide and even. As he reached the windward end of the lands, the team wheeled round under the hedges, and took a fresh width. The quantity set on was forty bushels an acre in this case.

Mr. Young remarks that, in general, thirty bushels are used for a complete dressing; that is, when dung or some other manure has not been previously applied to the same crop, which is very frequently the practice, and the quantity of top-dressing is then diminished to about

one-half of a complete dressing. Of soot a complete dressing, as above, costs from 30*s.* to 36*s.* per acre. Soot is found to answer best on wheat in April. It likewise succeeds on pease or clover in the same month, and has a good effect sown with barley, in the beginning of April, and harrowed in. A slight dressing of soot is used at any time in the spring, when grubs or worms appear to injure the young corn. The worms frequently make great havoc, by drawing the blades of young corn after them into their holes: this soot prevents best: soot thinly distributed on newly sown turnips, just before they come up prevents the fly or grub from injuring them, provided no rain falls to wash it into the soil. Soot answers best on light, dry, chalky soils, and in moderately wet seasons. It does little good on strong or wet land, or in very dry seasons, unless sown earlier than usual. The London soot from coals is rarely bought unmixed with cork-dust, coal-ashes, or sweepings of the streets; yet, even in this adulterated state, it is found to answer much better than real country soot from wood.

It is remarked, in the Agricultural Survey of Hertfordshire, that about Stevenage they spread from twenty to forty bushels an acre, bringing it from London; it costs 8*d.*, and the carriage 3*d.*, in all 11*d.* per bushel. And Mr. Clarke, of Sandridgebury, spreads from thirty-five to forty bushels an acre on wheat. But about Beachwood they sow from thirty to forty bushels on wheat, in February or March, bought at 1*s.* a bushel at London, and bring 160 bushels in a waggon with four horses. Around Hitchin, forty bushels are sown on wheat. And a good deal is used at Watford, at the rate of forty bushels an acre. Also about Barkway they have a very high opinion of it; fifty bushels an acre, brought thirty miles from London, are seen on wheat to an inch. And it is stated, in addition, that the practice is universal through this country; insomuch that the question is, whether there is a parish in it in which some men are not in the habit of using this manure from London. On cabbage crops, that have been sown, it has been found that if, as soon as the plants appear distinctly above the ground, a surge of soot be drilled upon them, to the amount of from ten to twelve bushels the acre, it affords much security against the fly. And it has been suggested that this business may be cheaply and conveniently executed by a hopper and round of cups, similar to Cook's, but larger, fixed to a frame similar to that of the Northumberland drill. When employed for preventing the fly, in drilled turnips, it should be sprinkled along the rows, from a scuttle, by the hand, or some such mean, in the proportion of about twenty bushels the acre.

But, in respect to the application of this sort of substance to land, it is remarked by Mr. Kidde, in the fourth volume of Communications to the Board of Agriculture, that all manures that are laid on the surface of land cannot be laid on too early in the season. Soot, for instance, is always recommended to be sown on wheats or clovers, and grass-lands, in the month of February, from a notion that if sown sooner they would exhaust themselves too soon. This he

thinks absurd reasoning. No manure can be of any service to the crop, which it is meant to advantage, until it reaches the roots: and what contributes more to save it than the winter rains, and the dissolving of the snow? He has, in consequence, always sown the soot for wheat and clover, when he has been able to procure it, in the month of November or December, and always with satisfaction to himself. He last year sowed with soot an enclosure of wheat of eight acres, part of which was sown in the beginning of December, before the frost set in, and a heavy rain succeeded the sowing; on the remaining parts, owing to his not being able to procure more soot at that time, the sowing was postponed until after the frost was gone, in the month of February. The quantity sown on an acre, in both instances, was equal; but the superiority of the crop of wheat, where it was sown early, might be discerned by the eye. He had the curiosity to have it thrashed separately, and found its increase beyond the other considerable. If he could procure soot at the time of sowing wheat, he should be under no apprehension of its answering then, if the land was worked for the wheat. Some years since, having bought a small quantity of soot immediately after harvest, he had the desire to try its effects on the crop at that early season, and having a peat stubble which had been ploughed twice, and was designed for wheat, after sowing as much of the land as he had soot for with wheat, he then had the soot sown, and ploughed both in together. He owns he was anxious to see the success of his experiment, as it was a novel one, as were his neighbours also who had seen it done. The remainder of the land was sown with soot, as he was able to procure it. The wheat, where the soot was soon with it, kept the lead during the first months: this he did not wonder at, but expected it from its forcing quality; but he was very much pleased to see it continue to do so during the remainder of the season, and at harvest the superiority in favor of it was easily to be seen.

Some have thought that twenty bushels of soot to the acre are nearly equal to fifty of the ashes of either coals, wood, or peat. And the writer of the Middlesex corrected Agricultural Report remarks that the smoke, consisting of the lightest particles of soot and coal, raised by the force of the ascending current of rarefied air arising from 300,000 fires in the metropolis and its vicinity, is daily deposited on the surrounding country; where the next rain washes it into the soil, and it promotes vegetation and the fertility of the land to a considerable degree. The dyers make a considerable use of soot, for a kind of dun-color.

**SOOTERKIN, n.s.** From soot. A kind of false birth, fabled to be produced by the Dutch women from sitting over their stoves.

When Jove was, from his teeming head,  
Of wit's fair goddess brought to bed,  
There followed at his lying-in,  
For after-birth a sooterkin.

*Swift.*

**SOOTH, n.s., adj., &** *Sax. roð, roðian,*  
**SOOTH'ER,** *[v. a.]* *to flatter. Truth;*  
**SOOTH'SAY, v. n.** *reality, (obsolete);*  
**SOOTH'SAYER, n.s.** *pleasing; delightful:*

hence to please with flattery or blandishment; to console; calm: soother corresponding: from the above root is also derived to soothsay, i. e. to predict; foretel (supposed truth): and soothsayer he who predicts.

A damsel, possessed with a spirit of divination, met us, which brought her masters much gain by *soothsaying.* *Acts XVI.*

Scarce was Musidorus made partaker of this oft-blinding light when there were found numbers of *soothsayers*, who affirmed strange and incredible things should be performed by that child. *Sidney.*

Sir, understand you this of me in *sooth*,  
The youngest daughter, whom you hearken for,  
Her father keeps from all access of suitors,  
Until the eldest sister first be wed. *Shakspeare.*

He looks like *sooth*: he says he loves my daughter;  
I think so too; for never gazed the moon  
Upon the water, as he'll stand and read  
My daughter's eyes. *Id. Winter's Tale.*

That c'er this tongue of mine,  
That laid the sentence of dread banishment  
On yond proud man, should take it off again  
With words of *sooth*! *Id. Richard II.*

In *soothing* them, we nourish 'gainst our senate  
The cockle of rebellion, insolence, sedition.

*Shakspeare.*

I cannot flatter: I defy  
The tongues of *soothsers.* *Id. Henry IV.*

A *soothsayer* bids you beware the ides of March.

*Shakspeare.*

If I have any skill in *soothsaying*, as in *sooth* I have none, it doth prognosticate that I shall change caps.

*Camden's Remains.*

The beldame

*Sooths* her with blandishments, and frights with threats. *Dryden.*

The very *sooth* of it is, that an ill habit has the force of an ill fate. *L'Estrange.*

I did not mean to chide you;  
For, *sooth* to say, I hold it noble in you  
To cherish the distressed. *Rowe.*

Thinks he that Mennon, soldier as he is,  
Thoughtless and dull, will listen to his *soothing*? *Id.*

I've tried the force of every reason on him,  
*Soothed* and caressed, been angry, *soothed again*;  
Laid safety, life, and interest in his sight;  
But all are vain, he scorns them all for Cato. *Addison's Cato.*

By his fair daughter is the chief confined,  
Who *sooths* to dear delight his anxious mind;  
Successless all her soft caresses prove,  
To banish from his breast his country's love. *Pope's Odyssey.*

Thus *soothed* and reconciled each seeks

The fairest British fair:  
The seat of empire is her cheeks,  
They reign united there. *Cowper.*

**SOP, n.s.** *Sax. rop; Span. sopá; Belgic soppe.* Any thing eatable steeped in liquor

The bounded waters

Would lift their bosoms higher than the shores,  
And make a *sop* of all this solid globe. *Shakspeare.*

Draw, you rogue! for, though it be night, yet the moon shines: I'll make a *sop o'* the moonshine of you. *Id.*

*Sops* in wine, quantity for quantity, inebriate more than wine of itself. *Bacon's Natural History.*

The prudent Sibyl had before prepared  
A *sop*, in honey steeped, to charm the guard;  
Which, mixed with powerful drugs, she cast before  
His greedy rinning jaws, just oped to roar. *Dryden.*

Ill nature is not cured with a *sop*; quarrelsome men, as well as quarrelsome curs, are worse for fair usage.  
L'Estrange.

SOPH, n.s. Lat. *sophista*. A young man who has been two years at the university.

Three Cambridge *sophs* and three pest templars came,

The same their talents, and their taste the same; Each prompt to query, answer, and debate, And smit with love of poesy and prate.

Pope's *Dunciad*.

SOPHI, n.s. Persian *soufi*. The emperor of Persia.

By this scimitar  
That slew the *sophi* and a Persian prince.

Shakspeare.

A fig for the sultan and *sophi*. Congreve.

SOPHI, or SOFI, a title given to the emperor of Persia, importing wise, sage, or philosopher. The title is by some said to have taken its rise from a young shepherd named Sophi, who attained to the crown of Persia in 1370; others derive it from the sophi or sages anciently called magi. Vossius gives a different account of the word-sophi in Arabic, he says, signifies wool; and he adds that it was applied by the Turks out of derision to the kings of Persia ever since Ishmael's time; because, according to their scheme of religion, he is to wear no other covering on his head but an ordinary red woollen stuff; whence the Persians are also called hezel-baschs, q. d. red-heads. But Bochart assures us that sophi, in the original Persian language, signifies one that is pure in his religion, and who prefers the service of God in all things; and derives it from an order of religious called by the same name. The sophis value themselves on their illustrious extraction. They are descended in a right line from Houssein, second son of Ali, Mahomet's cousin, and Fatima, Mahomet's daughter.

SOPHIS, or SOFEES, a kind of order of religious among the Mahometans in Persia, answering to what are otherwise called dervises, and among the Arabs and Indians faquires. Some will have them called sophis from a kind of coarse camblet which they wear, called souf, from the city of Souf in Syria, where it is principally manufactured. The more eminent of these sophis are complimented with the title of schiek, that is, reverend, much as in Romish countries the religious are called reverend fathers. Schiek Sophi, who laid the foundation of the grandeur of the royal house of Persia, was the founder, or rather the restorer of this order: Ishmael, who conquered Persia, was himself a sophi, and greatly valued himself on his being so. He chose all the guards of his person from among the religious of this order; and would have all the great lords of his court sophis. The king of Persia is still grand master of the order; and the lords continue to enter into it, though it has now fallen under some contempt.

SOPHISM, n.s.

SOPH'IST,

SOPH'ISTER,

SOPHIS'TICAL, adj.

SOPHIS'TICALLY, adv.

SOPHIS'TICATE, v.a., part., &

SOPHIS'TICA'TION, n.s. [adj.]

SOPH'ISTRY.

Lat. *sophisma*.

A fallacious ar-

gument; a fal-

lacy: sophist

and sophister

mean, one skil-

led in, or a pro-

fessor of sophis-

try: sophistical is fallacious; ambiguous; logomachical: the adverb corresponding: to sophisticate is to perplex; adulterate; corrupt with something spurious: the two noun substantives corresponding.

His *sophistry* prevailed; his father believed.

Sidney.

Alcidimus the *sophister* hath arguments to prove that voluntary and extemporal far excelleth premeditated speech.

Hooker.

If the passions of the mind be strong they easily sophisticate the understanding; they make it apt to believe upon every slender warrant, and to imagine infallible truth where scarce any probable shew appeareth.

Id.

A subtle traitor needs no *sophister*.

Shakspeare. Henry VI.

Here's three of us are *sophisticated*. Shakspeare. Neither know I whether I should prefer for madness, and *sophistical* cozenage, that the same body of Christ should be in a thousand places at once of this sublunary world.

Hall.

Wine sparkles brighter far than she,  
'Tis pure and right, without deceit,

And that no woman e'er will be;

No, they are all *sophisticate*.

Cowley.

If a heathen philosopher brings arguments from reason, which none of our atheistical *sophisters* can confute, for the immortality of the soul, I hope they will so weigh the consequences as neither to talk nor live as if there was no such thing.

Denham.

Besides easy submission to *sophistications* of sense, we have inability to prevent the miscarriages of our junior reasons.

Glanville.

Since then a great part of our scientifical treasure is most likely to be adulterate, though all bears the image and superscription of truth; the only way to know what is *sophisticate* and what is not so is to bring all to the examen of the touchstone.

Id.

That may seem a demonstration for the present, which to posterity will appear a mere *sophistical* knot.

More.

Divers experiments succeeded not because they were at one time tried with genuine materials, and at another time with *sophisticated* ones.

Boyle.

The drugs and simples sold in shops generally are adulterated by the fraudulent avarice of the sellers, especially if the preciousness may make their *sophistication* very beneficial.

Id.

When the state of the controversy is well understood, the difficulty will not be great in giving answers to all his *sophistical* cavils.

Stillingfleet.

The court of Croesus is said to have been much resorted to by the *sophists* of Greece in the happy beginning of his reign.

Temple.

Yet the rich cullyes may their boasting spare;  
They purchase but *sophisticated* ware;

'Tis prodigality that buys deceit,

Where both the giver and the taker cheat.

Dryden.

So truth, when only one supplied the state,  
Grew scarce and dear, and yet *sophisticate*.

Id.

The only persons amongst the heathens who *sophisticated* nature and philosophy, were the Stoicks: who affirmed a fatal, unchangeable, concatenation of causes, reaching even to the elicit acts of man's will.

South's Sermons.

These men have obscured and confounded the natures of things by their false principles and wretched *sophistry*; though an act be never so sinful they will strip it of its guilt.

South.

*Sophistication* is the act of counterfeiting or adulterating any thing with what is not so good, for the sake of unlawful gain.

Quincy.

Not all the subtle objections of *sophisters* and rabies, against the gospel, so much prejudiced the re-

ception of it, as the reproach of those crimes with which they aspersed the assemblies of Christians.

Rogers.  
The more youthful exercises of sophistry, themes, and declamations.

Felton.  
The eye bath its coats and humours transparent and colorless, lest it should tinge and sophisticate the light that it lets in by a natural jaundice. Bentley.

Bolingbroke argues most sophistically. Swift.

When a false argument puts on the appearance of a true one, then it is properly called a sophism or falacy.

Watts.

I, who as yet was never known to show  
False pity or premeditated woe,  
Will graciously explain great nature's laws,  
And hear thy sophisms in so plain a cause. Harte.

A SOPHISM, in logic, is a specious argument, having the appearance of truth, but leading to falsehood. Sophisms are reduced by Aristotle into eight classes, an arrangement so just and comprehensive that it is equally proper now as in former times. 1. Ignoratio elenchi, in which the sophist seems to determine the question, while he only does it in appearance. Thus the question, ‘Whether excess of wine be hurtful?’ seems to be determined by proving that wine revives the spirits and gives a man courage: but the principal point is here kept out of sight; for still it may be hurtful to health, to fortune, and reputation. 2. Petatio principii, a begging of the question, or taking for granted that which remains to be proved; as if any one should undertake to prove that the soul is extended through all the parts of the body because it resides in every member. This is affirming the same thing in different words. 3. Reasoning in a circle; as when the Roman Catholics prove the Scriptures to be the word of God by the authority of the church, and the authority of the church from the Scriptures. 4. Non causa pro causa, or the assigning of a false cause to any effect. Thus the supposed principle that nature abhors a vacuum was applied to explain the rising of water in a pump, before Galileo discovered that it was owing to the pressure of the atmosphere. In this way the vulgar ascribe accidents to divine vengeance, and the heresies and infidelity of modern times to learning. 5. Fallacia accidentis, in which the sophist represents what is merely accidental as essential to the nature of the subject. This is nearly allied to the former, and is committed by the Mahometans and Roman Catholics. The Mahometans forbid wine, because it is sometimes the occasion of drunkenness and quarrels; and the Roman Catholics prohibit the reading of the Bible because it has sometimes promoted heresies. 6. By deducing a universal assertion from what is true only in particular circumstances, and the reverse; thus some men argue, ‘Transcribers have committed many errors in copying the Scriptures, therefore they are not to be depended on.’ 7. By asserting any thing in a compound sense which is only true in a divided sense: so when the Scriptures assure us that the worst of sinners may be saved, it does not mean that they shall be saved while they remain sinners, but that if they repent they may be saved. 8. By an abuse of the ambiguity of words. Thus Mr. Hume reasons in his Essay on Miracles:—‘Experience is our only guide in

reasoning concerning matters of fact; now we know from experience that the laws of nature are fixed and invariable. On the other hand, testimony is variable, and often false; therefore, since our evidence for the reality of miracles rests solely on testimony, which is variable, and our evidence for the uniformity of the laws of nature is invariable, miracles are not to be believed.’ The sophistry of this reasoning depends on the ambiguity of the word experience, which in the first proposition signifies the maxims which we form from our own observation and reflection; in the second, it is confounded with testimony; for it is by the testimony of others, as well as our own observation, that we learn whether the laws of nature are variable or invariable. The Essay on Miracles may be recommended to those who wish to see more examples of sophistry, as we believe most of these eight species of sophisms are well illustrated by examples in that essay.

SOPHIST, in ancient Grecian history, from Σοφος, wise, was an appellation assumed by those who devoted their time to the study of science. This appellation appearing too arrogant to Pythagoras, he declined it, and wished to be called a philosopher; declaring that, though he could not consider himself as a wise man, he was indeed a lover of wisdom. True wisdom and modesty are generally united. The example of Pythagoras was followed by every man of eminence; while the name sophist was retained only by those who with a pomp of words made a magnificent display of wisdom upon a very slight foundation of knowledge. Those men taught an artificial structure of language, and a false method of reasoning, by which, in argument, the worst might be made to appear the better reason. See ORATORY, and SOPHISM. In Athens they were long held in high repute, and supported, not only by contributions from their pupils, but by a regular salary from the state. They were among the bitterest enemies of the illustrious Socrates, because he embraced every opportunity of exposing to contempt and ridicule their vain pretensions to superior knowledge, and the pernicious influence of their doctrines upon the taste and morals of the Athenian youth.

SOPHISTICATION, in trade, is the mixing of any thing with what is not genuine; a practice too common in the making up of medicines for sale; as also among vintners, distillers, and others, who are accused of sophisticating their wines, spirits, oils, &c., by mixing with them cheaper and coarser materials; and in many cases the cheat is carried on so artfully as to deceive the best judges.

SOPHOCLES, a celebrated Greek tragic poet, the son of Sophilus an Athenian, born at Colonus, in Attica, near Athens. Superior vigor and address in the exercises of the palestra, and skill in music, were the great accomplishments of young men in the states of Greece. In these Sophocles excelled; nor was he less distinguished by the beauty of his person. He was, like most of the Athenians, zealously attached to his country, which he served in some embassies, and in high military command with Pericles. He was also remarkable for the inviolable integrity of his life, but his studies were early devoted to the

tragic muse; the spirit of Æschylus lent a fire to his genius, and excited that noble emulation which led him to contend with and sometimes to bear away the prize from his great master. He wrote forty-three tragedies, of which only seven are extant. Having testified his love of his country by refusing to leave it, though invited by many kings; and having enjoyed the uninterrupted esteem of his fellow-citizens, which few of their great men could boast, he died in the ninety-first year of his age, about A. A. C. 406. The burial place of his ancestors was at Decelia, which the Lacedemonians had seized; but Ly-sander, their general, permitted the Athenians to inter their deceased poet; and the Spartans joined in paying him all the honors due to his patriotism, integrity, and high poetic excellence. Æschylus had attained the highest pitch in poetry, the true sublime; but Sophocles had an elevation of mind, tempered with so fine a taste, that he never passed the bounds of propriety. Under his conduct the tragic muse appeared with dignity, harmony, and grace. From him the theatre received additional embellishments, and the drama the advantage of a third speaker; but his distinguished excellence is in the judicious disposition of the fable, and so nice a connexion and dependence of the parts on each other that they all agree to make the event not only probable, but even necessary. This is peculiarly admirable in his *OEdipus, King of Thebes*; and in this important point he is far superior to every other ancient dramatic writer. While other eminent Athenians suffered by the ingratitude of their countrymen, Sophocles was vexed by that of his own children. They wished to become immediate masters of their father's possessions; and therefore, tired of his long life, they accused him before the Areopagus of insanity. The only defence the poet made was to read his tragedy of *OEdipus at Colonus*, and then he asked his judges whether the author of such a performance could be taxed with insanity? Upon this he was acquitted, and the children were dismissed with merited disgrace. The seven tragedies which remain are Ajax, Electra, *OEdipus king of Thebes*, Antigone, The Trachinæ, Philoctetes, and *OEdipus at Colonus*. These, together with the Greek Scholia which accompany them, have been translated into Latin by Johnson, and into English by Dr. Franklin and Mr. Potter.

SOPHONISBA, the daughter of Asdrubal, the celebrated Carthaginian general, lady of uncommon beauty and other accomplishments. She was married to Syphax, a Numidian prince, who was at first very successful against his rival Masinissa, but was afterwards totally defeated, and his kingdom reduced by the combined forces of Masinissa and the Romans. See NUMIDIA. On this occasion Sophonisba fell into the hands of Masinissa, and by her beauty soon captivated her conqueror. Her husband, Syphax, dying soon after at Rome, Masinissa married her. But this act displeased the Romans, because she was a Carthaginian princess, and the king, though the firm ally of Rome, had not soothed asked the consent of these proud republicans. Scipio Africanus Senior, in other respects a great and virtuous character, disgraced his name to eternity

on this occasion, by ordering the timid Numidian monarch to dismiss Sophonisba. The mean-spirited monster, instead of resenting such an impious insult as he ought to have done, by breaking with the Romans, and joining the Carthaginians (in which case probably Carthage might have vied with Rome for ages), went to his wife, and advised her to die like the daughter of Asdrubal. She accordingly drank the cup of poison sent her by her husband with uncommon resolution and serenity, about A. A. C. 203; and upon this melancholy scene our countryman Thomson composed his admired tragedy of Sophonisba. But, by this act of infernal tyranny, Scipio and the Romans disgraced their name as much as it was afterwards honored by the opposite generous and virtuous conduct of Scipio the Younger.

SOPHORA, in botany, a genus of the monogynia order, and decandria class of plants; natural order thirty-second, papilionaceæ: cal. quinquedentate and gibbous above: cor. papilionaceous; the wings being of the same length with the vexillum: the seed is contained in a legumen. There are sixteen species, viz. 1. S. alba; 2. alopecuroides; 3. aurea; 4. australis; 5. biflora; 6. Capensis; 7. flavescentis; 8. genistoides; 9. hirsuta; 10. japonica; 11. lupinoidea; 12. macrophylla; 13. occidentalis; 14. tetrapetala; 15. tinctoria; and 16. tomentosa.

SOPORIFEROUS, adj. *Latin, sopor and SOPORIF'IC.* *s'p'ro, or f'cio.* Causing sleep; narcotic.

The particular ingredients of those magical ointments are opiate and *soporiferous*; for anointing of the forehead, neck, feet, and back-bone, procures dead sleeps.

Bacon.  
The color and taste of opium are, as well as its *soporific* or *anodyne* virtues, mere powers depending on its primary qualities.

Locke.  
While the whole operation was performing I lay in a profound sleep, by the force of that *soporiferous* medicine infused into my liquor.

Seijt.

SOPHIRON, a comic poet of Syracuse, the son of Agathocles and Damasellus. His poems were universally admired, and even Plato read them with rapture. But none of them are extant.

SOPHRONISCUS, the father of Socrates.

SOPORIFICS, or hypnotics, are medicines that produce sleep; such as opium, laudanum, the seed or extract of poppies, &c. But it is now generally admitted among physicians that they produce this effect, not by any direct sedative power or quality, as the great Cullen erroneously supposed, but, as Brown first observed, first by stimulating and exciting the whole system to a high pitch of vigor, and afterwards by inducing indirect debility, which, in proportion to the quantity taken of these high stimuli, and the previous state of the excitement, either ends in sleep and recovery, or death.

SORACTES, a mountain of ancient Etruria, near the Tiber.

SORANI, the people of the ancient Sora.

SORANUS, an ancient physician of Ephesus, who flourished under Trajan and Adrian. He practised first at Alexandria, and afterwards at Rome. He was of the sect called Methodists, and a follower of Thessalus, Trallian, &c., and

was the last and greatest of that sect. See MEDICINE, Index. Some of his works are extant, and have been published; particularly 1. In Artem Medendi Isagoge Saluberrima; Basil, 1528. 2. De Utero et Muliebri Pudendo. Græcè. Paris, 1554. 3. The Life of Hippocrates, in Greek, which has been repeatedly printed, in almost all the editions of Hippocrates's works.

SORANUS, another physician, also of Ephesus, who flourished somewhat later than the preceding, and who also wrote a work, on the Diseases of Women.

SORANUS, in ancient mineralogy. See GRANITE.

SORBALT (Paul), an eminent physician of the seventeenth century, born in Austrian Hainault. He became professor of medicine at Vienna, and his abilities and learning raised him to be appointed physician to the imperial court. He published, 1. Commentaries on the Aphorisms of Hippocrates; 4to., 1680. 2. Medicina Universalis, Theoretica et Practica, folio, 1701; and several other works. He died in 1691.

SORBIERE (Samuel), a French writer, born of Protestant parents about 1612. His father was a tradesman; his mother Louisa was sister of the learned Samuel Petit, minister of Nismes. See PETIT. His parents dying, his uncle took care of his education, and sent him to Paris to study divinity; but he soon tired of it, and turned to physic; wherein he made such quick progress that he published an abridged system of medicine. He went to Holland in 1642, where he married in 1646; but returned to France, and was made principal of the college of Orange in 1650, and historiographer of France. In 1653, to recommend himself to the court, he abjured the Protestant religion, and turned Catholic; and in 1654 went to Paris, and published his Reasons, dedicated to cardinal Mazarine. He next went to Rome, and introduced himself to pope Alexander VII. by a Latin letter, in which he inveighed against the Protestants; but all his servile versatility procured him no patronage from either of these great prelates. He then went to England, and in 1644 published an account of his voyage thither, but so much stuffed with illiberal falsehoods against the English, that the French court deprived him of his office of historiographer, and banished him. His book was also refuted both in Paris, and at London by Sprat, bishop of Rochester. Sorbiere had learning and abilities, but lost himself for want of integrity. He translated More's Utopia, part of Camden's Britannia, and some of Hobbes's works, into French. He died of a dropsy, April 9th, 1670.

SORBONNE (Robert de), a native of the village of the same name, in France, born in 1201, who, having got education and entered into orders, became so famous for his preaching that Louis IX. appointed him his chaplain, confessor, and almoner; afterwards made him canon of Cambray, and at last of the church of Paris. Robert was not only a very learned man for the age he lived in, and wrote several works on theology, but gave birth to that seminary of learning which continued to bear his name till the revolution. He died in 1274.

SORBONNE, or SORBON, the house or college

of the faculty of theology anciently established in the university of Paris. It was founded in 1252 by St. Louis, or rather by Robert de Sorbonne, who gave his own name to it. The foundation was laid in 1250; queen Blanche, in the absence of her husband, furnishing Robert with a house, which had formerly been the palace of Julian the apostate, of which some remains are still visible. Afterwards the king gave him all the houses he had in the same place in exchange for some others. The college was afterwards magnificently rebuilt by the cardinal de Richelieu. The design of this institution was to assist poor students in divinity. There were lodgings in it for thirty-six doctors, who were said to be of the society of the Sorbonne; those admitted into it without being doctors were said to be of the hospitality of the Sorbonne. Six regent doctors formerly held lectures every day for an hour and a half each; three in the morning, and three in the afternoon.

SORBONNE is also used in general for the whole faculty of theology at Paris; as the assemblies of the whole body were held in the house of the Sorbonne; and the bachelors of the other houses of the faculty, as the house of Navarre, &c., came thither to hold their sorbonnique, or act for being admitted D. D.

SORBONNIQUE. See last article.

SORBUS, service-tree, in botany, a genus of the trigynia order, and icosandria class of plants: cal. quinquefid; the petals are five; the berry is below the flower, soft, and containing three seeds. There are three species, viz.

1. S. aucuparia, mountain ash, quicken-tree, quick-beam, or roan tree, rises with a straight upright stem and regular branching head, twenty or thirty feet high or more, covered with a smooth grayish brown bark; pinnated leaves of eight or ten pair of long, narrow, serrated folioles, and an odd one, smooth on both sides; and large umbellate clusters of white flowers at the sides and ends of the branches, succeeded by clusters of fine red berries, ripe in autumn and winter. There is a variety with yellow-striped leaves. This species grows wild in many parts of this island in mountainous places, woods, and hedge-rows, often growing to the size of timber; and is admitted into most ornamental plantations for the beauty of its growth, foliage, flowers, and fruit; the latter in particular, being produced in numerous red large bunches all over the tree, exhibit a fine appearance in autumn and winter, till devoured by the birds, especially the blackbird and thrush, which are so allured by this fruit as to flock from all parts and feed on it voraciously. In the island of Jura the juice of the berries is employed as an acid for punch. It is probable that this tree was in high esteem with the Druids; for it is more abundant than any other tree in the neighbourhood of those Druidical circles of stones so common in North Britain. It is still believed by superstitious persons that a branch of this tree can defend them and their cattle from all danger!

2. S. domestica, or cultivated service-tree, with eatable fruit, grows with an upright stem, branching thirty or forty feet high or more, having a brownish bark, and the young shoots in sum-

mer covered with a mealy down ; pinnated leaves of eight or ten pair of broadish deeply serrated ones and an odd one, downy underneath, and large umbellate clusters of white flowers at the sides and ends of the branches, succeeded by bunches of large, fleshy, edible red fruits, of various shapes and sizes. This tree is a native of the southern warm parts of Europe, where its fruit is used at table as a dessert, and it is cultivated here in many of our gardens, both as a fruit tree and as an ornament to diversify hardy plantations.

*S. hybrida*, or mongrel service tree of Gothland, grows twenty or thirty feet high ; it has half-pinnated leaves, very downy underneath ; and clusters of white flowers, succeeded by bunches of round reddish berries in autumn.

**SOR' CERER**, *n. s.* { Fr. *sorcier* ; low Lat.

**SOR' CERESS**, } *sortarius*. A conjuror ;

**SOR' CEROUS**, *adj.* } enchanter : sorceress,

**SOR' CERY**, *n. s.* } the feminine : sorcerous, magical, partaking of the nature of sorcery which signifies enchantment ; magic ; infatuating art or effects.

They say this town is full of cozenage,  
As nimble jugglers that deceive the eye,  
Drug-working *sorcerers* that change the mind,  
Soul-killing witches that deform the body.  
And many such like libertines of sin. *Shakespeare.*

This witch Sycorax,  
For mischiefs manifold, and *sorceries* terrible,  
Was banished. *Id.*

The weakness of the power of witches upon kings and magistrates may be ascribed to the weakness of imagination ; for it is hard for a witch or a *sorcerer* to put on a belief that they can hurt such.

*Bacon's Natural History.*

Divers witches and *sorceresses* have fed upon human flesh, to aid their imaginations with high and thin vapours. *Bacon.*

Th' art ent'reng Circe's house,  
Where by her med'cines, black and *sorcerous*,  
Thy soldiers all are shut in well-armed sties,  
And turned to swine. *Chapman.*

The snaky *sorceress* that sat,  
Just by hell-gate, and kept the fatal key,  
Risen, and with hideous outcry rushed between. *Milton.*

Adders' wisdom I have learned,  
To fence my ears against thy *sorceries*. *Id.*

Actæon has long tracts of rich soil ; but had the misfortune in his youth to fall under the power of *sorcery*. *Tutler.*

He saw a sable *sorcerer* arise,  
All sudden gorgons hiss, and dragons glare,  
And ten horned fiends. *Pope.*

The Egyptian *sorcerers* contended with Moses ; but the wonders which Moses wrought did so far transcend the power of magicians, as made them confess it was the finger of God. *Watt's Logic.*

**SORCERY**, or **magic**, is the power which some persons were formerly supposed to possess of commanding the devil and the infernal spirits by skill in charms and invocations, and of soothing them by fumigation. Sorcery is therefore to be distinguished from witchcraft ; an art which was supposed to be practised, not by commanding evil spirits, but by compact with the devil. As an instance of the power of bad smells over devils or evil spirits, we may mention the flight of the evil spirit mentioned in Tobit into the remote parts of Egypt, produced, it is said, by

the smell of the burnt liver of a fish. Lilly informs us that one Evans, having raised a spirit at the request of lord Bothwell and Sir Kenelm Digby, and forgetting a fumigation, the spirit vexed at the disappointment, pulled him without the circle, and carried him from his house in the Minories into a field near Battersea Causeway. King James, in his *Daemonologia*, has given a very full account of the art of sorcery :—‘ Two principal things,’ says he, ‘ cannot well in that errand be wanted : holy water (whereby the devil mockes the Papists), and some present of a living thing unto him. These things being all prepared, circles are made, triangular, quadrangular, round, double, or single, according to the forme of the apparition they crave. When the conjured spirit appears, which will not be while after many circumstances, long prayers, and much muttering and murmurings of the conjurors, if they have missed one jote of all their rites ; or if any of their feete once slyd over the circle, through terror of his fearful apparition, he paies himself at that time of that due debt which they ought him, and otherwise would have delaied longer to have paied him : I mean, he carries them with him, body and soule.’ How the conjurers made triangular or quadrangular circles his majesty has not informed us, nor does he seem to imagine there was any difficulty in the matter. We therefore suppose that he learned his mathematics from the same system as Dr. Sacheverell, who, in one of his sermons, made use of the following simile : ‘ They concur like parallel lines, meeting in one common centre.’ Another mode of consulting spirits was by the beryl, by means of a speculator or seer ; who, to have a complete sight, ought to be a pure virgin, a youth who had not known woman, or at least a person of irreproachable life and purity of manners. The method of such consultation is this : The conjurer, having repeated the necessary charms and adjurations, with the litany or invocation peculiar to the spirits or angels he wishes to call (for every one has his particular form), the seer looks into a crystal or beryl, wherein he will see the answer, represented either by types or figures ; and sometimes, though very rarely, will hear the angels or spirits speak articulately. Their pronunciation is, as Lilly says, like the Irish, much in the throat. Lilly describes one of these beryls or crystals. It was, he says, as large as an orange, set in silver, with a cross at the top, and round about engraved the names of the angels Raphael, Gabriel, and Uriel. A delineation of another is engraved in the frontispiece to Aubery’s *Miscellanies*. The sorcerers or magicians do not always employ their art to do mischief ; but, on the contrary, frequently exert it to cure diseases inflicted by witches ; to discover thieves ; recover stolen goods ; to foretel future events, and the state of absent friends. On this account they are frequently called white witches.

Our ancestors had great faith in these fables, when they enacted, by stat. 33 Hen. VIII. c. 8, all witchcraft and sorcery to be felony without benefit of clergy ; and again, by stat. 1 Jac. I. c. 12, that all persons invoking an evil spirit, or consulting, covenanting with, entertaining, em-

ploying, feeding, or rewarding any evil spirit ; or taking up dead bodies from their graves to be used in any witchcraft, sorcery, charm, or enchantment ; or killing or otherwise hurting any person by such infernal arts ; should be guilty of felony without benefit of clergy, and suffer death. And if any person should attempt by sorcery to discover hidden treasure, or to restore stolen goods, or to provoke unlawful love, or to hurt any man or beast, though the same were not effected, he or she should suffer imprisonment and pillory for the first offence, and death for the second. These acts continued long in force, to the terror of all ancient females in the kingdom ; and many poor wretches were sacrificed thereby to the prejudice of their neighbours and their own illusions, not a few having by some means or other confessed the incredible facts at the gallows. But all executions for this dubious crime are now abolished. It is enacted, by stat. 9 Geo. II. c. 5, that no prosecution shall for the future be carried on against any person for conjuration, witchcraft, sorcery, or enchantment :—But the misdemeanor of persons pretending to use witchcraft, tell fortunes, or discover stolen goods, by skill in the occult sciences, is still deservedly punished with a year's imprisonment.

**SORD,** *n. s.* Corrupted from sward. Turf; grassy ground.

This is the prettiest low-born lass that ever ran on the green *sord*. *Shakspeare. Winter's Tale.*

An altar of grassy *sord*. *Milton.*

**SORDES,** *n. s.* Latin *sordes*. Foulness; dregs.

The sea washes off the soil and *sordes*, wherein mineral mosses were involved and concealed, and thereby renders them more conspicuous. *Woodward.*

**SOR'DID,** *adj.* Lat. *sordidus*. Foul; gross; **SOR'DIDLY,** *adv.* filthy; dirty: literally or

**SOR'DIDNESS,** *n. s.* Mentally, hence covetous: the adverb and noun substantive corresponding.

I omit the madnesses of Caligula's delights, and the execrable *sordidness* of those of Tiberius. *Cowley.*

Thou canst not those exceptions make, Which vulgar *sordid* mortals take. *Id.*

He may be old,

And yet not *sordid*, who refuses gold. *Denham.*

There Charon stands,

A *sordid* god; down from his hoary chin

A length of beard descends, uncombed, unclean. *Dryden.*

If one should cease to be generous and charitable, because another is *sordid* and ungrateful, it would be much in the power of vice to extinguish christian virtues. *L'Estrange.*

Providence deters people from sluttishness and *sordidness*, and provokes them to cleanliness. *Ray.*

It is strange, since the priest's office heretofore was always splendid, that it is now looked upon as a piece of religion, to make it low and *sordid*. *South's Sermons.*

**SORE,** *n. s., adj.*, { Sax. *rap*; Belgic and **SORE'LY,** [& *adv.*] Danish *saur*. A place

**SORE'NESS,** *n. s.* } tender and painful; place excoriated; an ulcer. 'To be a sore, there must

be an excoriation,' says Johnson; 'a tumor or bruise is not called a sore before some disruption happen:' *sore*, adjective, is tender to the touch:

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hence mentally tender or soon provoked; violent with pain: the adverb and noun substantive corresponding.

My loins are filled with a *sore* disease; and there is no whole part in my body. *Common Prayer.*

Thine arrows stick fast in me, and thy hand presseth me *sore*. *Id.*

The knight then lightly leaping to the prey, With mortal steel him smote again so *sore*,

That headless his unwieldy body lay. *Faerie Queene.*

Let us hence provide  
A salve for any *sore* that may betide.

*Shakspeare. Henry VI.*

Threescore and ten I can remember well,  
Within the volume of which time I've seen  
Hours dreadful, and things strange; but this *sore*  
night

Hath trifled former knowings. *Shakspeare.*

I will persevere in my course of loyalty, though the conflict be *sore* between that and my blood. *Id. King Lear.*

To lapse in fulness

Is *sorer* than to lie for neel; and falsehood  
Is worse in kings than beggars. *Id. Cymbeline.*

The buck is called the first year a fawn; the second, a pricket; the third, a *sorel*; and the fourth year, a *sore*. *Shakspeare.*

Here's the smell of the blood still; all the perfumes of Arabia will not sweeten this little hand. Oh! oh! oh!—What a sigh is there! the heart is sorely overcharged. *Id.*

He that, whilst the *soreness* of his late pangs of conscience remains, finds himself a little indisposed for sin, presently concludes repentance hath had its perfect work. *Decay of Piety.*

He this and that, and each man's blow  
Doth eye, defend, and shift, being laid to *sore*. *Daniel.*

*Sore* hath been their fight,  
As likeliest was, when two such foes met armed. *Milton.*

Gentle lady, may thy grave  
Peace and quiet ever have;

After this day's travel *sore* ;  
Sweet rest seize thee evermore. *Id.*

Distrust shook *sore* their minds.  
Though iron hew and mangle *sore*, *Id.*

Would wounds and bruises honour more. *Hudibras.*

Malice and hatred are very fretting and vexatious, and apt to make our minds *sore* and uneasy; but he that can moderate these affections will find ease in his mind. *Tillotson.*

My foot began to swell, and the pain asswaged, though it left such a *soreness* that I could hardly suffer the clothes of my bed. *Temple.*

By these all festering *sores* her counsels heal,  
Which time or has disclosed or shall reveal. *Dryden.*

While *sore* of battle, while our wounds are green,  
Why should we tempt the doubtful die again? *Id.*

So that if Palamon were wounded *sore*,  
Arcite was hurt as much. *Id. Knight's Tale.*

*Sore* sighed the knight, who this long sermon heard:

At length, considering all, his heart he cheared. *Dryden.*

Of the warrior train,  
Though most were *sorely* wounded, none were slain. *Id.*

It was a right answer of the physician to his patient, that had *sore* eyes: if you have more pleasure in the taste of wine than in the use of your sight,

wine is good ; but if the pleasure of seeing be greater to you than that of drinking, wine is naught.

*Locke.*

They are determined to live up to the holy rule, though *sore* evils and great temporal inconveniences should attend the discharge of their duty.

*Attelbury.*

Lice and flies, which have a most wonderful instinct to find out convenient places for the hatching and nourishment of their young, lay their eggs upon *sores*.

*Bentley.*

Laugh at your friends ; and, if your friends are *sore*,

So much the better, you may laugh the more.

*Pope.*

How, Didus, shall a Roman, *sore* repulsed,  
Greet your arrival to this distant isle ?  
How bid you welcome to these shattered legions ?

*A. Philips.*

My father blessed me fervently,

Yet did not much complain ;

But *sorely* will my mother sigh

Till I come back again.

*Byron.*

SOREL, or William Henry, a town of Lower Canada, at the confluence of the Richlieu, Chamby, or Sorel River, with the St. Lawrence. It stands on the site of a French fort, built as a defence against the incursions of the Indians, and which received its name from Sorel, a captain of engineers, who superintended its construction. The plan of it covers about 120 acres of ground, although at present the number of houses does not much exceed 150, exclusive of stores, barracks, and government buildings. The houses are of wood, substantially and well constructed, but the Protestant and the Catholic churches are both of stone. There are eight principal streets, named, like the town itself, after different branches of the royal family. Before the town, the bank of the Richlieu is from ten to twelve feet high, having near the point two small wharfs. The river is here 250 yards broad, with from two and a half to five and a half fathoms of water. On the opposite shore are convenient places for building vessels. A small distance from a little rivulet, to the southward of the place, is a blockhouse and hospital ; and a little further on a good wooden building, with out-houses, gardens, &c., called the government house, serving as a residence for the commanding officer of the troops. The present town was begun about the year 1785, when some loyalists and disbanded soldiers settled at it ; and it still continues to be the residence of many old military servants of the crown. Some trade is carried on, but not so much as might be supposed from its situation at the junction of two navigable rivers. Long.  $72^{\circ} 55'$  W., lat.  $46^{\circ} 5'$  N.

SOREX, the shrew, in zoology, a genus of animals belonging to the class of mammalia, and order of sera. It has two long fore teeth in the upper jaw, which are divided into two points ; in the lower jaw are two or four fore teeth, the two middle ones, in the latter case, being shorter than the others :—On each side in both jaws are two or more tusks : the grinders are knobbed. The animals of this genus have in general thick clumsy bodies, and five toes on each of their feet ; the head resembles that of the mole, being thick at the forehead, much elongated, and end-

ing in a conical snout, and having very small eyes ; in other circumstances of general figure they resemble the murine tribe of quadrupeds. They burrow in the ground, some species living mostly about the sides of waters ; and most of them feeding on worms and insects. There are sixteen species, viz.

1. S. albipes, the white footed shrew of Pen-  
nant. The tail is slender and hairy ; the head and upper parts of the body are of a dusky ash color ; the feet, belly, and teeth, white.

2. S. araneus, the field-shrew mouse, or the fetid shrew, with short rounded ears ; eyes small, and almost hid in the fur ; nose long and slender, upper part the longest ; head and upper part of the body of a brownish red ; belly of a dirty white ; length, from nose to tail, two inches and a half ; tail one and a half. Inhabits Europe : lives in old walls and heaps of stones, or holes in the earth ; is frequently near hay-ricks, dung-hills, and necessary houses ; lives on corn, insects, &c. ; is often observed rooting in ordure like a hog : from its food, or the places it frequents, has a disagreeable smell ; cats will kill, but not eat it : it brings four or five young at a time. The ancients believed it was injurious to cattle ; an error now detected. There seems to be an annual mortality of these animals in August, numbers being then found dead in the paths.

3. i. S. arcticus, the Labradore shrew of Pen-  
nant, has the head and upper parts of the body dusky, and the sides of a brownish rust. They inhabit Labradore and Hudson's Bay. The nose is very long and slender, the upper jaw extending far beyond the lower ; the eyes are small, and almost hid in the fur ; the ears are short.

3. ii. S. arcticus cinereus, the gray Labradore shrew, a variety of a dusky gray color on the upper parts of the body, and yellowish white below.

4. S. Brasiliensis, the Brasilian shrew, is of a dark color, with three broad stripes along the back ; is about five inches long ; the tail not quite two ; the scrotum is pendulous ; the muzzle pointed, and the teeth are very sharp. They inhabit Brasil, and are not afraid of cats : they will even play with them.

5. S. caeruleus, the blue shrew, has a tail of a middle length ; the upper parts of a pale blue ; the belly lighter, with white legs and feet. It is nearly eight inches long ; the tail three and a half ; the nose long and slender ; the upper jaw longest ; the upper fore teeth short ; the under long, slender, and crooked inwards ; white whiskers ; small eyes ; ears broad, round, naked, and transparent ; the fur short. It has so strong a scent of musk, that it perfumes every thing it runs over. Cats will not attack them. They inhabit Java and other East Indian islands.

6. S. exilis, the pygmy shrew, is a singular curiosity. It is the smallest quadruped hitherto known. It scarcely exceeds half a drachm, or the sixteenth part of an ounce in weight. The tail is long and very slender, then suddenly grows remarkably thick and round, and again tapers to the end. The general shape and color resemble the araneus, but paler. These pygmies inhabit Siberia, between the Oby and the Jenissei, notwithstanding the extreme cold, and their diminutive size.

7. *S. fodiens*, the water shrew, has a long slender nose; very minute ears; very small eyes, hid in the fur; color of the head and upper part of the body black; throat, breast, and belly, of a light ash-color; beneath the tail a triangular dusky spot; much larger than the last; length, from nose to tail, three inches and three-quarters; tail, two inches. Inhabits Europe; long since known in England; but lost till May 1768, when it was discovered in the fens near Revesley Abbey, Lincolnshire; burrows in the banks near the water; is called by the fenmen the blindmouse.

8. *S. liricaudatus*, the carinated shrew, has a tail taper, slender, and ridged underneath; the head and upper parts of a dusky ash-color, with a white spot behind each eye; the belly is whitish, and the fore teeth are brown. Penn.

9. *S. Mexicanus*, the tucan, or Mexican shrew, has a sharp nose; small round ears; without sight; two long fore teeth above and below; thick, fat, and fleshy body; short legs, so that the belly almost touches the ground; long crooked claws; tawny hair; short tail; length, from nose to tail, nine inches. Inhabits Mexico; burrows, and makes such a number of cavities that travellers can scarcely tread with safety; if it gets out of its hole, does not know how to return, but begins to dig another; grows very fat, and is eatable; feeds on roots, kidney beans, and other seeds. M. de Buffon thinks it a mole; but it seems more properly to belong to the genus of *sorex*.

10. *S. minutus*, the minute shrew, has a head nearly as big as the body; very slender nose; broad short naked ears; whiskers reaching to the eyes; eyes small, and capable of being drawn in; hair very fine and shining; gray above, white beneath; no tail; the least of quadrupeds, according to Linnæus. Inhabits Siberia; lives in a nest made of lichens, in some moist place beneath the roots of trees; feeds on seeds, digs, runs swiftly, and has the voice of a bat.

11. *S. moschatus*, the musky shrew of Pallas, Schreber, Pennant, and Kerr; the Muscovy or musk rat of Ray and Buffon (see Smellie's edit. v. 260); the water rat of Clusius, Aldrovandus, and Gmelin; is the *Castor moschatus*, or musky beaver, of Linnæus, already described under *CASTOR*.

12. *S. murinus*, the Javan shrew, or murine shrew of Pennant, has a tail of a middle length, shorter than the body; the body dusky; the legs, feet, and tail, ash-colored. It is about the size of a common mouse, has a long slender nose, channelled underneath, with long ash-colored whiskers; ears rounded and almost naked; two sharp parallel fore teeth in each jaw; and five toes armed with claws on each foot. They inhabit the Isle of Java.

13. *S. pusillus*, the timid shrew, inhabits the deserts of Persia. The tail is short, and has the hair partly shed towards the sides; the ears are rounded; the body is three inches and a half long, of a dark gray above, and ash-color below. The teeth are like those of the *araneus* (No. 2); in other respects it resembles the Surinam species (No. 15), but is much larger. They live in holes under ground.

14. *S. quadricaudatus*, square-tailed shrew of Pennant, has a tail inclined to a square form; the head and upper parts of a dusky ash-color; the belly paler, and the fore teeth brown.

15. *S. Surinamensis*, the Surinam shrew, has a tail scarcely half the length of the body; is chestnut-colored above, and of a pale yellowish ash-color below. In size, shape of the head and snout, teeth, eyes, and feet, it resembles the water shrew (No. 7); the ears are like those of the *araneus* (No. 2); the tail has very short smooth, close set hair, cinereous above, and whitish below; the muzzle is white. They inhabit Surinam.

16. *S. unicolor*, the uniform shrew of Pennant, has a tail narrowed or compressed at the base, and the whole body of a uniform dusky ash-color. Mr. Kerr suspects this species, with the *albipes* (No. 1), the *liricaudatus* (No. 8), and the *quadricaudatus*, (No. 14), to be only varieties of the *araneus* (No. 2), though he has adopted Mr. Pennant's arrangement, in making them as distinct species. All the four was discovered by professor Herman, near Strasburg.

**SORIA**, a province of Spain, in Old Castile, lying to the west of Navarre and Arragon. Its area is 4300 square miles, hilly almost throughout, being intersected by the Sierras or chains called respectively Ministra, Moncayo, and Paredes. Even its plains are elevated, narrow, and by no means fertile. The climate is mild in the vallies, but bleak on the hills. The products are sheep, wool and lambs, wine and fruit, and a small quantity of hemp and flax. There are also a few manufactures of woollen, linen, paper, and leather for home consumption. The Ebro flows through the north-east corner, and the Douro has its source in this high district, in which it is joined by the Tajuna and Ucerio. The other rivers of the province are the Jalon, the Cidacos, and the Alamo. Population 200,000 It has several small lakes.

**SORIA**, the chief town of the above district, is situated on the Douro, not far from its source, having fifteen churches and chapels, eleven monasteries, and four hospitals. It has also a few manufactures of silk stockings, leather, soap, and woollens, with some trade in wool. It is, however, a dull and gloomy place. Near this was the site of the ancient Nunantia. Inhabitants 6000. 110 miles north-east of Madrid, and forty-nine W. N. W. of Calatavud.

**SORITES**, *n. s.* Gr. σωρετης, a heap. An argument where one proposition is accumulated on another.

Chrysippus, the stoick, invented a kind of argument consisting of more than three propositions, which is called *sorites* or a heap. Dryden.

The most notable way of managing a controversy, is that which we may call arguing by torture. These disputants convince their adversaries with a *sorites*, commonly called a pile of faggots. Addison.

*Sorites* is when several middle terms are chosen to connect one another successively in several propositions, till the last proposition connects its predicate with the first subject. Thus, All men of revenge have their souls often uneasy; uneasy souls are a plague to themselves; now to be one's own plague is folly in the extreme. Wuit's Logick.

**SORITES**, in logic, is a species of reasoning in which a great number of propositions are so linked together, that the predicate of the one becomes continually the subject of the next, till at last a conclusion is formed by bringing together the subject of the first proposition and the predicate of the last. Such was that merry argument of Themistocles, to prove that his little son under ten years old governed the whole world. Thus : my son governs his mother; his mother me; I the Athenians; the Athenians the Greeks; Greece commands Europe; Europe the whole world : therefore my son commands the whole world. See LOGIC.

**SORITIA**, an ancient town of Spain.

**SORN**, *n. s.* { Irish and Scotch, *sorel*.

**SORE'HOX.** { *horn*; Ital. *sorione*. A kind of arbitrary exaction or servile tenure, formerly prevalent in Scotland and Ireland, by which a chieftain came down among the tenants with his followers, and lived on free quarters.

They exact upon them all kind of services ; yea, and the very wild exactions, coignie, livery, and *sorehon*: by which they poll and utterly undo the poor tenants and freeholders under them.

*Spenser's Ireland.*

To **SORN**, Scottish and Irish, is used also generally for to live at another's expense, by obtrusion, or without invitation.

**SORREL**, *n. s.* Sax. *rufe*; Fr. *sorel*. A plant agreeing with dock in its general character; only differing in having an acid taste.

Of all roots of herbs the root of *sorrel* goeth the farthest into the earth. It is a cold and acid herb, that loveth the earth, and is not much drawn by the sun. *Bacon.*

Acid austere vegetables contract and strengthen the fibres, as all kinds of *sorrel*, the virtues of which lie in acid astringent salt, a sovereign antidote against the putrescent bilious alkali.

*Arbuthnot on Aliments.*

**SORREL**, in botany, a species of the rumex, which grows in pastures and meadows, and is well known. The natives of Lapland boil large quantities of the leaves in water, and mix the juice when cold with the milk of their rein-deers, which they esteem an agreeable and wholesome food. The Dutch cultivate this plant for its usefulness in the dyeing of woollen cloths black; and we know that by means of the common broad-leaved sorrel an excellent black color is, in many places in Scotland, given to woollen stuffs without the aid of copperas. As this mode of dyeing does not in the smallest degree injure the texture of the cloth, which continues to the last soft and silky, without that hardness to the touch which it acquires when dyed black by means of copperas; our readers will probably thank us for the following receipt, with which we have been favored by a learned physician:—Let the stuff to be dyed be well washed with soap and water, and afterwards completely dried. Then of the common broad-leaved sorrel, boil as much as shall make an acid decoction of sufficient quantity to let the stuff to be dyed lie in it open and easy to be stirred. The greater quantity of sorrel that is used the better will the color be; and therefore if the pot or caldron will not hold enough at once, when part has been sufficiently boiled, it must be taken out and wrung, and a

fresh quantity be boiled in the same juice or decoction. When the liquor is made sufficiently acid, strain it from the sorrel through a sieve, put the cloth or yarn into it, and let it boil for two hours, stirring it frequently. If stockings be among the stuff to be dyed, it will be expedient, after they have been an hour in the boiling liquor, to turn them inside out, and at the end of the second hour let the whole be poured into a tub or any other vessel. The pot or caldron must then be washed, and water put into it, with half a pound of log-wood chips for every pound of dry yarn or cloth. The logwood and water should boil slowly for four hours; and then the cloth or yarn being wrung from the sour liquor, and put into the logwood decoction, the whole must be suffered to boil slowly for four hours, stockings, if there be any, being turned inside out at the end of two hours. Of this last decoction there must, as of the former, be enough to let the cloth lie open and easy to be stirred while boiling. At the end of the four hours the cloth must be taken out, and among the boiling liquor, first removed from the fire, must be poured a Scots pint or English gallon of stale urine for every pound of dry cloth or other stuff to be dyed. When this compound liquor has been stirred and become cold, the cloth must be put into it and suffered to remain well covered for twelve hours, and then dried in the shade; after which, to divest it of smell or any other impurity, it may be washed in cold water, and dried for use.

**SORREL, INDIAN RED**, { Two species of  
**SORREL, INDIAN WHITE**, { *hibiscus*.

**SORREL, TREE.** See ANDROMEDA.

**SORREL, WOOD**, in botany. See OXALIS.

**SORRENTO**, a town of Italy, on a peninsula, on the south side of the gulf of Naples, between the mountains of Vico and Massa. Its situation is delightful, being surrounded with gardens. At present it contains only 4200 inhabitants, but the number of ancient marbles, and of the ruins of edifices, shew it to have been formerly more extensive. Of its temples, those of Juno, Diana, and Hercules, were the most magnificent. Its wines were in former ages accounted little inferior to the most renowned of Italy. At present they are raised in large quantities; also olives, oranges, and silk. Part of the latter is manufactured in the town. Sorrento is the see of an archbishop, and gave birth to Tasso, the celebrated poet. Fifteen miles S.S.E. of Naples.

**SORRI** (Peter), an Italian painter, born at Sienna, in 1556. He was the disciple of Salimbeni; and excelled in history, portrait, and landscape. He died in 1622.

**SOR'ROW**, *v. n. & n. s.* { Saxon *rongian*;  
**SOP'ROWED** *adj.* { Swed. *sorja*; Goth.

**SOR'ROWFUL**. { *saurgian*. To grieve; mourn; be sad or dejected: grief; pain for something past; sadness; mourning. 'Sorrow is not the effect of present evil, but of lost good,' says Dr. Johnson: sorrowed means accompanied with sorrow: sorrowful, mournful; grievous; deeply serious.

Hannah said, No my lord, I am a woman of a sorrowful spirit: I have poured out my soul before the Lord. *1 Samuel.*

The things that my soul refused to touch are as my sorrowful meat. *Job vi. 7.*

Now I rejoice, not that ye were made sorry, but that ye sorrowed to repentance. *2 Cor. vii. 9.*

Blessed are they which have been sorrowful for all thy scourges ; for they shall rejoice for thee, when they have seen all thy glory. *Tob. xiii. 14.*

Sorrow on thee, on all the pack of you ; That triumph thus upon my misery ! *Shakspeare.*

The miserable change, now at my end, Lament nor sorrow at. *Id. Antony and Cleopatra.*

Now the publick body, which doth seldom

Play the recanter, feeling in itself

A lack of Timon's aid, hath sense withal

Of its own fall, restraining aid to Timon,

And sends forth us to make their sorrowed tender. *Shakspeare.*

Fading flowers in every field,

To winter floods their treasures yield ;

A honey'd tongue, a heart of gall,

Is fancy's spring, but sorrow's fall. *Raleigh.*

I neither fear to die, nor desire to live ; and, having mastered all grief in myself, I desire no man to sorrow for me. *Hayward.*

But peace was theirs, and harmony within, They knew no sorrow, for they knew no sin. *Whyle's Poems.*

A world of woe and sorrow. *Milton.*

Send them forth, though sorrowing, yet in peace. *Id.*

Some other hour I will to tears allow ; But, having you, can shew no sorrow now. *Dryden.*

Sorrow is uneasiness in the mind, upon the thought of a good lost, which might have been enjoyed longer ; or the sense of a present evil. *Locke.*

Sad the prince explores

The neighb'ring main, and sorrowing treads the shores. *Pope.*

**SOR'RY, *adj.*** *Sax. rānug ; Dan. sorrig ; Swed. sorg* (sorrow); *Isl.*

**SOR'RILY, *adv.*** *Sax. rānug ; Dan. sorrig ; Swed. sorg* (sorrow); *Isl.* Grieved for something past. Generally used of slight or casual miscarriages or vexations : vexatious ; pitiful ; worthless : it is in these latter senses only that the adverb and noun substantive are used.

The king was *sorry* : nevertheless, for the oath's sake, he commanded the Baptist's head to be given her. *Matthew xiv. 9.*

Thy pipe, O Pan, shall help, though I sing *sorriily*. *Sidney.*

If now, why do you keep alone ? Of *sorriest* fancies your companions making, Using those thoughts which should indeed have died With them they think on. *Shakspeare. Macbeth.*

I'm *sorry* for thee, friend ; 'tis the duke's pleasure. *Shakspeare.*

If the union of the parts consists only in rest, it would seem that a bag of dust would be of as firm a consistence as that of marble ; and Bojazet's cage had been but a *sorry* prison. *Glanville.*

Course complexions, And cheeks of *sorry* grain, will serve to ply The sampler, and to teize the housewife's wool. *Milton.*

If this innocent had any relation to his Thebais, the poet might have found some *sorry* excuse for detaining the reader. *Dryden.*

How vain were all the ensigns of his power, that could not support him against one slighting look of a *sorry* slave ! *L'Estrange.*

If such a slight and *sorry* business as that could produce one organical body, one might reasonably

expect, that now and then a dead lump of dough might be leavened into an animal. *Bentley's Sermons.*

We are *sorry* for the satire interspersed in some of these pieces, upon a few people, from whom the highest provocations have been received. *Swift.*

**SORT, *n. s., v. a., & v. n.*** *Fr. and Ital.*

**SORT'AL, *adj.*** *sorte ; Span. suarre*

**SORT'ANCE, *n. s.*** *of Latin sors.*

Kind ; species ; lot ; portion ; rank ; condition ; manner ; superior condition : to separate into lots or classes ; arrange ; conjoin ; cull ; choose : to be joined ; suited ; arranged ; &c. : also (Fr. *sortir*) to come out or issue in a particular manner : sortal is an adjective introduced and explained below by Locke : sortance, suitableness ; agreement.

I have written the more boldly unto you in some *sort*, as putting you in mind. *Rom. xv. 15.*

That I may laugh at her in equal *sort* As she doth laugh at me, and makes my pain her sport. *Spenser's Sonnets.*

Flowers, in such *sort* worn, can neither be smelt nor seen well by those that wear them. *Hooker.*

The one being a thing that belongeth generally unto all ; the other, such as none but the wiser and more judicious *sort* can perform. *Id.*

I have bought

Golden opinions from all *sorts* of people. *Shakspeare.*

Mine eyes are full of tears : I cannot see ; And yet salt water blinds them not so much, But they can see a *sort* of traitors here. *Id.*

Is signior Montanto returned from the wars ? —I know none of that name, lady ; there was none such in the army of any *sort*. *Id.*

Make a lottery,

And by decree let blockish Ajax Draw the *sort* to fight with Hector. *Id.*

I come to thee for charitable licence, To *sort* our nobles from our common men. *Id.*

Here doth he wish his person, with such power As might hold *sortance* with his quality, The which he could not levy. *Id. Henry IV.*

And so far am I glad it did so *sort*, As this their jangling I esteem a sport. *Shakspeare.*

The illiberality of parents towards their children, makes them base, and *sort* with any company. *Bacon.*

A man cannot speak to a son but as a father ; whereas a friend may speak as the case requires, and not as it *sorteth* with the person. *Id.*

Princes cannot gather this fruit, except they raise some persons to be companions ; which many times *sorteth* to inconvenience. *Id.*

For, when she *sorts* things present with things past,

And thereby things to come doth oft foresee ; When she doth doubt at first, and choose at last, These acts her own, without her body, be. *Davies.*

Send his mother to his father's house, That he may *sort* her out a worthy spouse. *Chapman.*

The slips of their vines have been brought into Spain, but they have not *sorted* to the same purpose as in their native country. *Abbot's Description of the World.*

To Adam in what *sort* shall I appear ? *Milton.* The first *sort* by their own suggestion fell. *Id.*

Among unequals, what society Can *sort*, what harmony, or true delight ? Which must be mutual, in proportion due Given and received. *Id. Paradise Lost.*

The Creator calling forth by name  
His mighty angels, gave them several charge,  
As sorted best with present things. *Id.*  
The swain perceiving, by her words ill sorted,  
That she was wholly from herself transported.

Browne.  
A sort of lusty shepherds strive. Waller.

A piece of cloth made of white and black threads,  
though the whole appear neither white nor black, but  
gray, yet each remains what it was before, if the  
threads were pulled asunder, and sorted each color by  
itself. Boyle.

A substantial and unaffected piety not only gives a  
man a credit amongst the sober and virtuous, but even  
among the vicious sort of men. *Tilton.*

I shall not be wholly without praise, if in some  
sort I have copied his stile. Dryden.

Endeavouring to make the signification of specific  
names clear, they make their specifick ideas of the  
sorts of substances of a few of those simple ideas  
found in them. Locke.

The number of simple ideas, that make the nomi-  
nal essence of the lowest species, or first sorting of  
individuals, depends on the mind of man. *Id.*

As things are ranked under names, into sorts or  
species, only as they agree to certain abstract ideas,  
the essence of each sort comes to be nothing but that  
idea which the sortal, if I may so call it from sort, as  
I do general from genus, name stands for. *Id.*

These three sorts of poems should differ in their  
numbers, designs, and every thought. Walsh.

Nor do metals only sort and herd with metals in  
the earth, and minerals with minerals; but both in  
common together. Woodward.

Hospitality to the better sort, and charity to the  
poor; two virtues that are never exercised so well as  
when they accompany each other.

Atterbury's Sermons.

For different stiles with different subjects sort,  
As several garbs with country, town, and court.

Pope.

SORTILEGE, was an ancient species of divi-  
nation performed by sortes or lots. The sortes  
prenestinæ, famous in antiquity, consisted in  
putting a number of letters, or even whole words,  
into an urn; and then, after shaking them toge-  
ther, they were thrown on the ground; and  
whatever sentences could be made out from  
them constituted the answer of the oracle. To  
this method of divination succeeded that which  
has been called sortes Homerianæ and sortes  
Virgilianæ, a mode of enquiring into futurity  
which undoubtedly took its rise from a general  
custom of the oracular priests of delivering  
their answers in verse; it subsisted a long time  
among the Greeks and Romans; and being  
from them adopted by the Christians, it was not  
till after a long succession of centuries that it  
became exploded. Among the Romans it con-  
sisted in opening some celebrated poet at ran-  
dom, and among the Christians the Scriptures,  
and drawing, from the first passage that presented  
itself to the eye, a prognostic of what would  
befal one's self or others, or direction for conduct  
when under any exigency. There is good evi-  
dence that this was not confined to the vulgar;  
the greatest persons, philosophers of the best re-  
pute, admitted this superstition. Socrates him-  
self was not free of it; for when in prison, hear-  
ing this line of Homer,

Within three days I Phthia's shore shall see,  
he immediately said, within three days I shall be

out of the world; gathering it from the double  
meaning of the word Phthia, which in Greek is  
both the name of a country and signifies corrup-  
tion or death. This prediction, addressed to  
Æschinus, was not easily forgotten, as it was  
verified. When this superstition passed from  
paganism into Christianity, the Christians had  
two methods of consulting the divine will from  
the Scriptures; the one casually to open the di-  
vine writings, and take their direction, as above  
mentioned; the other, to go to church with a  
purpose of receiving, as a declaration of the will  
of heaven, the words of the Scripture which were  
singing at the instant of entrance. This unwar-  
rantable practice of enquiring into futurity pre-  
vailed very generally in England till the beginning  
of the eighteenth century; and sometimes the  
books of Scripture, and sometimes the poems  
of Virgil, were consulted for oracular responses.  
One remarkable instance, or rather two, happened  
to king Charles I. and lord viscount Falkland.  
See CARY. Several, whose devotion has not  
always been regulated by judgment, have pur-  
sued this method of divination; and have gene-  
rally observed that the consequence has been  
despair or presumption. To such we beg leave  
to recommend one passage in Scripture, 'thou  
shalt not tempt the Lord thy God.'

SORY, in natural history, a fossil substance  
much spoken of by the ancients, and sometimes,  
but erroneously, supposed to be now lost. It is  
firm and not brittle, though of a spongy and  
cavernous structure, and is considerably heavy.  
It is found in masses of no regular shape or  
size, some being roundish, others angular or  
flattened, and some of the size of a walnut, others  
of many pounds weight. It feels very harsh  
and rough to the touch, and is covered with no  
investient coat or crust, but shows its natural  
surface, which is always corrugated or wrinkled,  
and usually full of small protuberances and cavi-  
ties; and, when broken, is found to be of a  
rugged and spongy structure within. Its natural  
color is a rusty black; but it is sometimes red-  
dish and sometimes bluish: and is commonly  
stained, in different places, with spots of a bluish  
or rust color, when black, and of a greenish hue  
when it is of a reddish color: in the places  
where it is free from these, it is usually some-  
what bright and sparkling. It is of an acrid  
and disagreeable taste, and of a strong and na-  
useous smell; put into the fire it burns to a deep  
purple; and, if boiled in water, a great part of it  
becomes dissolved in it; and this may again  
be separated from the water by evaporation and  
crystallisation, and then appears in the form of  
pure blue vitriol, forming regular rhomboidal  
crystals, and tinging iron to a copper-color, on  
being first wetted and then rubbed upon it.

It is still found in many parts of the Turkish  
dominions, particularly in Gallo-Grecia; as also  
in some parts of Germany. In this country it is  
boiled for the blue vitriol it contains. In Turkey  
it is mixed with lime, and made into a paste  
with water, which is laid on such parts of the  
body as they woud eradicate the hair from, and  
effects that purpose in a very few minutes. In  
the eastern nations, where it is thus used, it is  
known by the name of rusma. The ancients

used it to take off pimples, and put a piece of it into a hollow tooth, as a remedy for the tooth-ache. There can be no doubt of their soty being the same substance with this; since Dioscorides has described it to be blackish in color, full of small cavities, moist on the surface (as ours always is in moist weather), and of a disagreeable taste and smell. This substance, as also the chalcitis, misy, and melanteria, are all properly ores of vitriol, the particles of those salts being so perfectly blended in them as not to be at all distinguishable to the naked eye, yet being always regularly separable from them by water, which is to the saline ores what fire is to those of the metalline kind.—Hill's History of Fossils, p. 606.

**SOSIGENES**, a celebrated mathematician of Egypt, who flourished in the time of Julius Caesar, and was employed by him in reforming the Roman Kalendar, which it stood very much in need of. Without detracting therefore from Caesar's merit in forming the plan of that chronological reform, the merit of the execution belongs to Sosigenes, who flourished about A. A. C. 45, when the Julian year or period commenced. His works on astronomy and mathematics are lost.

**SOSILUS**, a learned Spartan writer who flourished in the time of Hannibal, with whom he was very intimate, taught him Greek, and wrote the history of that great man's life, which is lost.—Corn. Nepos.

**SOSIPATER**, a grammarian, who flourished in the reign of Honorius. He published five books of observations on grammar, but they are not extant.

**SOSS**, v. n. Fr. *secousse*. A cant word. To sit lazily on a chair; to fall at once into a chair.

The winter sky began to frown;  
Poor Stella must pack off to town;  
From wholesome exercise and air

To *sousing* in an easy chair.

*Swift.*

**SOSTHENES**, the chief ruler of the Jewish synagogue at Corinth, who, upon Gallio's dismissing the accusation of the Jews against Paul, as groundless, was seized by the Greeks and severely beaten, in presence of the deputy. Some think that he was converted, and that he is the person whose name is joined with Paul's in the salutation of the 1st Epistle to the Corinthians, and whom he honors with the title of a brother.

**SOSTI**, a town of Naples, in Calabria Ultra, ten miles south of Squillace.

**SOSTRATUS**, the son of Dexiphanes, a celebrated architect, born at Cnidos, who flourished in the reign of Ptolemy Philadelphus, and was employed by that monarch to erect the Pharos of Alexandria. This he did to great perfection, and was well paid for it; yet he endeavoured, by a trick, to defraud Ptolemy of the honor, and assume it to himself: but this measure had only served to perpetuate the memory of his own villainy.

**SOSVA**, the name of two considerable rivers of Tobolsk, in Asiatic Russia. The first rises in the Oursals, about 65° N. lat., and, running almost due east, falls into the Obi, near Beresof, after a course of about 160 miles. It receives a smaller river of the same name, called the Little

Sosva. The other rises in the same chain of mountains, but somewhat farther to the south; and, after running southwards about 200 miles, joins the Sosva, and the united stream takes the name of Tauda.

**SOT**, n. s. v. n. & v. a. } **Sax. pot**; Fr. *sot*; } Belg. *sot*; Teut. *sotz*.  
**SOTISH**, adj. } **SOTISHLY**, adv. } A blockhead; a dull, ignorant, stupid, fellow; a drunkard: to stupify; infatuate; cause to tattle: tipple: the adjective, adverb, and noun substantive, that follow, corresponding.

Either our brags  
Were crackt of kitchen trulls, or his description  
Proved us unspeaking *sots*. *Shakspeare.*  
All's but naught:  
Patience is *sottish*, and impatience does  
Become a dog that's mad.

*Id. Antony and Cleopatra.*  
Upon the report of his approach more than halt  
fell away and dispersed; the residue, being more  
desperate or more *sottish*, did abide in the field, of  
whom many were slain. *Hayward.*

Northumberland, *sottishly* mad with over great fortune, procured the king, by his letters patent under the great seal, to appoint the lady Jane to succeed him in the inheritance of the crown. *Hayward.*

Soul-blinded *sots*, that creep  
In dirt, and never saw the wonders of the deep. *Drayton.*

Sometimes phlegm putrifies into *sottishness*, *sottishness* into an ignorance or neglect of all religion. *Holiday.*

The inhabitants of Soldania in Africk are so *sottish* and grossly ignorant, that they differ very little from brutes. *Wilkins.*

He gained a king,  
Ahaz his *sottish* conqueror. *Milton.*  
Atheism is impudent in pretending to philosophy; and superstition *sottishly* ignorant, in fancying that the knowledge of nature tends to irreligion. *Glanville.*

Every sign  
That calls the staring *sots* to nasty wine. *Roscommon.*  
The potion  
Turns his brain and stupifies his mind; *Dryden.*  
The *sotted* moon-calf gapes.  
'Tis *sottish* to offer at things that cannot be brought about. *L'Estrange.*

Tell him that no history or antiquity can match his conduct; and presently the *sot*, because he knows neither history nor antiquity, shall begin to measure himself by himself, which is the only sure way for him not to fall short. *South.*

Few consider what a degree of *sottishness* and confirmed ignorance men may sin themselves into. *Id.*

A surly ill-bred lord,  
That chides and snaps her up at every word;  
A brutal *sot*, who, while she holds his head,  
With drunken filth bedaubed the nuptial bed. *Granville.*

So *sottishly* to lose the purest pleasures and comforts of this world, and forego the expectation of immortality in another; and so desperately to run the risk of dwelling with everlasting burnings, plainly discovers itself to be the most pernicious folly and deplorable madness in the world. *Bentley.*

The first part of the text, the folly and *sottishness* of atheism, will come home to their case since they make such a noisy pretence to wit and sagacity. *Id.*

How ignorant are *sottish* pretenders to astrology! *Swift.*

**SOTADEA CARMINA**, a name given to serpentine verses, which can be read either way (see **SERPENTINE VERSES**); such as the following:—

Roma tibi subito motibus ibit amor.

Si bene te tua laus taxat, sua laute tenebis.

It was also a name given to all obscene poems; from

**SOTADES**, a Greek poet of Thrace, who delighted in that sort of poetry. He even wrote a poem in praise of an unnatural crime to which he was addicted. At last he got what he merited; for, writing a satirical poem against Ptolemy Philadelphus, he was put into a cage of lead, and thrown into the Red Sea.

**SOTER**, Gr. Σωτῆρ, Saviour, a name assumed by the first Ptolemy of Egypt, and the first Antiochus of Syria. See **EGYPT**.

**SOTERIA**, in antiquity, sacrifices offered to the gods, the saviours, for delivering a person from danger; as also poetical pieces composed for the same purpose.

**SOTERICUS**, a poet and historian who flourished in the reign of Dioclesian. He wrote a panegyric on that emperor, and a Life of Apollonius Tyranæus. His works were much esteemed, but are now lost, except a few fragments, preserved by the scholiast of Lycophron.

**SOTERUS** (St.), bishop of Rome, who succeeded Anicetus, A. D. 168, and suffered martyrdom in 177, during the persecution under Marcus Aurelius, according to Dr. Watkins. But Mr. Marcel places his accession to the bishopric in 175, and his martyrdom in 179; in which dates Alstedius agrees with him. Such differences among chronologists, in modern history, are unaccountable.

**SOTIATES**, an ancient people of Gaul, conquered by Cæsar.—Cæs. de Bel. Gal. iii. c. 20, 21.

**SOTO** (Dominic), a learned Spanish Dominican, born at Segovia in 1494. He distinguished himself as a theologian, and was one of the most active and esteemed members of the council of Trent. He was appointed confessor to Charles V.; and died in 1560, aged sixty-six. His works are numerous.

**SOUBISE** (John de Parthenay), lord of. He was a distinguished hero among the Protestants. In 1562 he was appointed by the prince of Conde to command in the city of Lyons, which he defended most effectually, and performed many great actions there.

**SOUBISE** (Benjamin de Rohan), duke of, grandson of the preceding, by his celebrated daughter Catherine de Parthenay. He vigorously supported the Protestants, and assisted his brother the duke of Rohan in all his enterprises for that purpose, particularly during the siege of Rochelle. In 1621 he held out the siege of St. Jean d'Angeli, against an army commanded by Louis XIII., and when obliged to surrender received a pardon. Yet soon after he took Royan; and in 1622 took Oleron, and reduced the whole country of Lower Poitou; but, the fortune of war afterwards changing, he took refuge in England, where he procured a powerful supply to the Protestants in Rochelle; and where he continued till he died.

**SOUCHAI** (John Baptist), a learned French writer, born at St. Avant, near Vendome, in

1687. In 1720 he was elected a member of the Academy of Inscriptions, and furnished several learned dissertations, which are preserved in their Memoirs. He was also canon of Rodez, counsellor to the king, and professor of eloquence in the Royal College. He died in 1780.

**SOUDAN**, a word in the language of Negroland, signifying the country of the Negroes. See **CASHNA** and **NEGROLAND**.

**SOUUDAN**, a country of Interior Africa, described as lying between Upper Egypt and Sennaar. Browne places it between lat. 11° and 16° N., and between long. 26° and 30° E. On the north it is bounded by a desert, which separates it from Egypt; on the east by Kordofan, which is now subject to Soudan, and lies between it and Sennaar; and on the south and east by countries of which the names are hardly known. Mr. Browne visited Soudan in hopes of being able to trace the Bahr el Abad, or true Nile, to its source, but was disappointed; the sultan, a cruel and capricious tyrant, detained him a prisoner at large about three years. Soudan, or Darfur, abounds with towns or villages, ill built of clay, and none of them very large. The perennial rains, which fall in Darfur from the middle of June till the middle of September, generally both frequent and violent, suddenly invest the face of the country, till them dry and sterile, with a delightful verdure. Except where the rocky nature of the soil absolutely impedes vegetation, wood is found in great quantity; nor are the natives assiduous to clear the ground, even where it is designed for the cultivation of grain. As soon as the rains begin, the proprietor, and all the assistants he can collect, go out to the field, and having made holes, at about two feet distant with a kind of hoe, over all the ground he occupies, the dokn, a kind of millet, is thrown into them, and covered with the foot. The time for sowing the wheat is nearly the same. The dokn remains scarcely two months before it is ripe, the wheat about three. The animals are the same as in other parts of Africa in the same latitude. Though the Furians breed horses, and purchase very fine ones in Dongola, and from the Arabs east of the Nile, the ass is more used for riding; and an Egyptian ass (for the asses of Darfur are diminutive and indocile like those of Britain) fetches from the value of one to that of three slaves. The villages are infested with hyenas; and in the unfrequented parts of the country are elephants, rhinoceroses, lions, leopards, and all the other quadrupeds of Africa. The Arabs often eat the flesh of lions and leopards, and sometimes they so completely tame those animals as to carry them loose into the market place. Our author tamed two lions, of which one acquired most of the habits of a dog. He satiated himself twice a-week with the offal of the butchers, and then commonly slept for several hours successively. When food was given them, they both grew ferocious towards each other, and towards any one who approached them. Except at that time, though both were males, he never saw them disagree, nor show any sign of ferocity towards the human race. Even lambs passed them unmolested. Among the birds, the vultur perenopterus, or white-headed vulture, is most worthy of no-

tice. It is of surprising strength, and is said by the natives to be very long lived. 'I have lodged,' says Mr. Browne, 'a complete charge of large shot, at about fifty yards distance, in the body of this bird: it seemed to have no effect on him, as he flew to a considerable distance, and continued walking afterwards. I then discharged the second barrel, which was loaded with ball; this broke his wing; but, on my advancing to seize him, he fought with great fury with the other. There are many thousands of them in the inhabited district. They divide the field with the hyena: what carrion the latter leaves at night, the former come in crowds to feed on in the day. Near the extremity of each wing is a horny substance, like the spur of an old cock. It is strong and sharp, and a formidable instrument of attack. Some fluid exudes from this bird that smells like musk, but from what part I am uncertain.' The serpents found in Soudan are the same as in Egypt; but the natives have not the art of charming them, like the Egyptians. The locust of Arabia is very common, and is frequently roasted and eaten, particularly by the slaves.

In Darfur there seems to be a scarcity of metals; but in its neighbourhood all kinds are to be found. The copper brought by the merchants from the territories of certain idolatrous tribes bordering on Fur is of the finest quality, in color resembling that of China, and appears to contain a portion of zinc, being of the same pale hue. Iron is found in abundance. Silver, lead, and tin, they receive from Egypt; but of gold, in the countries to the east and west, the supply is abundant. Alabaster, and various kinds of marble, are found within the limits of Fur, as is fossil salt within a certain district; and there is a sufficient supply of nitre. Of our European trees, very few exist in Darfur. The characteristic marks of those species which most abound there, are their sharp thorns, and the solid and unperishable quality of their substance. They seem to be much the same as those of Abyssinia. There is a small tree called enneb, to the fruit of which they have given the name of grapes. It bears leaves of a light green hue; and the fruit, which is of a purple color, is attached, not in bunches but singly, to the smaller branches, and interspersed among the leaves. The internal structure of the fruit is not very unlike the grape, which it also resembles in size; but the pulp is of a red hue, and the taste is strongly astringent. The water-melon (*cucurbita citrullus*) grows wild over almost all the cultivable lands, and ripens as the corn is removed. In this state it does not attain a large size. As it ripens the camels, asses, &c., are turned to feed on it. The seeds, as they grow blackish, are collected to make a kind of tar, kutran. Those plants of the melon which receive artificial culture grow to a large size, and are of exquisite flavor. Tobacco is produced in abundance; and cochineal is found in Darfur, or its neighbourhood. The harvest is conducted very simply. The women and slaves break off the ears with their hands, leaving the straw standing, which is afterwards applied to buildings, &c. They then put them in baskets, and carry them away. When threshed, they expose the grain to the sun till it become

quite dry; after this a hole in the earth is prepared, the bottom and sides of which are covered with chaff to exclude the vermin. This cavity or magazine is filled with grain, which is then covered with chaff, and afterwards with earth, whereby it is preserved tolerably well. In using it for food, they grind it, boil it, and eat it with milk, or with a sauce made of dried meat boiled with onions, &c. The Furians use little butter. The monarch can do nothing contrary to the koran, but he may do more than the laws will authorise; and, as there is no council to control or assist him, his power is despotic. He speaks in public of the soil and its productions as his personal property, and of the people as little else than his slaves. His power in the provinces is delegated to officers, called meleks, who possess an authority equally arbitrary. At the beginning of the harif, or wet season, which is the moment for sowing the corn, the king goes out with his meleks and the rest of his train; and while the people turn up the ground and sow the seed, he also makes several holes with his own hand. This custom calls to the mind a practice of the Egyptian kings mentioned by Herodotus. The population is not large. An army of 2000 men was spoken of, when Mr. Browne was in the country, as a great one; and he does not think that the number of souls within the empire exceeds 200,000. The troops are not famed for skill, courage, or perseverance. In their campaigns much reliance is placed on the Arabs who accompany them, and who are properly tributaries rather than subjects of the sultan. One energy of barbarism they possess, in common with other savages, that of being able to endure hunger and thirst. In their persons the Furians are not remarkable for cleanliness. Though observing as Mahometans all the superstitious formalities of prayer, their hair is rarely combed, or their bodies completely washed. The hair of the pubes and axillæ it is usual to exterminate. They have no soap, but a kind of farinaceous paste is prepared, which being applied with butter to the skin, and rubbed continually till it becomes dry, not only improves its appearance, but removes from it accidental sores, and the effect of continued transpiration. The female slaves are dexterous in the application of it; and to undergo this operation is one of the refinements of African sensuality. Nothing resembling current coin is found in Soudan, unless it be small tin rings, the value of which is in some degree arbitrary. The Austrian dollars, and other silver coins brought from Egypt, are all sold as ornaments for the women. The disposition of the Furians is cheerful; and that gravity and reserve which the precepts of Mahometanism inspire seems by no means to sit easy on them. A government perfectly despotic, and not ill administered, yet forms no adequate restraint to their violent passions. Prone to inebriation, but unprovided with materials or ingenuity to prepare any other fermented liquor than buza, with this alone their convivial excesses are committed. But though the sultan published an ordinance (March 1795), forbidding the use of that liquor under pain of death, the plurality, though less publicly than before, still indulge themselves in

it. A company often sits from sun-rise to sun-set, drinking and conversing, till a single man sometimes carries off nearly two gallons of that liquor. The buza has, however, a diuretic and diaphoretic tendency, which precludes any danger from these excesses. In this country dancing is practised by the men as well as the women, and they often dance promiscuously. The vices of thieving, lying, and cheating in bargains, are here almost universal. No property, whether considerable or trifling, is safe out of the sight of the owner, nor indeed scarcely in it, unless he be stronger than the thief. In buying and selling, the parent glories in deceiving the son, and the son the parent; and God and the prophet are hourly invoked, to confirm the most palpable frauds and falsehoods. The privilege of polygamy the people of Soudan push to the extreme. By their law, they are allowed four free women, and as many slaves as they can maintain; but the Furians take both free women and slaves without limitation. The sultan has more than 100 free women, and many of the meleks have from twenty to thirty. In their indulgence with women they pay little regard to restraint or decency. The form of the houses secures no great secrecy to what is carried on within them; yet the concealment which is thus offered is not always sought. The shade of a tree or long grass is the sole temple required for the sacrifices to the Cyprian goddess. In the course of licentious indulgence, father and daughter, son and mother, are sometimes mingled; and the relations of brother and sister are exchanged for closer intercourse. About 150 years ago, previously to the establishment of Islamism, the people of Fur seem to have formed wandering tribes; in which state they probably contracted these monstrous habits of immorality. In their persons they differ from the negroes of the coast of Guinea. Their hair is generally short and woolly, though some have it of the length of eight or ten inches, which they esteem a beauty. Their complexion is for the most part perfectly black. The Arabs, who are numerous within the empire, retain their distinction of feature, color, and language. They most commonly intermarry with each other. The slaves, which are brought from the country they call Fertit (land of idolaters), perfectly resemble those of Guinea, and their language is peculiar to themselves. The revenues of the crown consist of a duty on all merchandise imported, which, in many instances, amounts to nearly a tenth; of a tax on all slaves exported; of all forfeitures for misdemeanors; of a tenth on all merchandise, especially slaves; of a tribute paid by the Arabs, who breed oxen, horses, camels, sheep; of a quantity of corn paid annually by every village; besides many valuable presents. The king is chief merchant in the country; and not only despatches with every caravan to Egypt a great quantity of his own merchandise, but also employs his slaves to trade with the goods of Egypt on his own account, in the countries adjacent. The commodities brought by the caravans from Egypt are:—1. Amber beads. 2. Tin. 3. Coral beads. 4. Cornelian beads. 5. False cornelians. 6. Beads of Venice. 7. Agate. 8. Rings, silver

and brass, for the ankles and wrists. 9. Carpets. 10. Blue cotton cloths. 11. White cotton ditto. 12. Indian muslins and cottons. 13. Blue and white cloths of Egypt, called melyas. 14. Sword-blades from Cairo. 15. Small looking-glasses. 16. Copper face-pieces, or defensive armour for the horses' heads. 17. Fire arms. 18. Kohhel for the eyes. 19. Rhea, a kind of moss from European Turkey, for food and a scent. 20. She, a species of absynthium, for its odor, and as a remedy; both the last sell to advantage. 21. Coffee. 22. Nutmegs. 23. Dufr, the shell of a fish in the Red Sea, used for perfume. 24. Silk unwrought. 25. Wire, brass and iron. 26. Coarse glass beads, made at Jerusalem. 27. Copper culinary utensils, for which the demand is small. 28. Old copper for reworking. 29. Small red caps of Barbary. 30. Thread linens of Egypt. 31. Light French cloths. 32. Silks of Scio. 33. Silk and cotton pieces of Aleppo, Damascus, &c. 34. Shoes of red leather. 35. Black pepper. 36. Writing paper, a considerable article. 37. Soap of Syria. The goods transported into Egypt are—1. Slaves, male and female. 2. Camels. 3. Ivory. 4. Horns of the rhinoceros. 5. Teeth of the hippopotamus. 6. Ostrich feathers. 7. Whips of the hippopotamus's hide. 8. Gum. 9. Pimento. 10. Tamarisks, made into round cakes. 11. Leather sacks for water and dry articles. 12. Peroquets in abundance, and some monkeys and Guinea fowls. 13. Copper, white, in small quantity.

**SOVEREIGN**, *adj. & n. s.* { Fr. *souverain*; Ital. *sovraano*; Span. *sobrero*.

All of Lat. *supernus*. Supreme in power or influence; having no superior: hence efficacious; predominant: a sovereign is a supreme lord: the adverb and noun substantive following correspond.

As teaching bringeth us to know that God is our supreme truth; so prayer testifieth that we acknowledge him our sovereign good. *Hooker.*

You my sovereign lady,

Causeless have laid disgraces on my head. *Shakspeare. Henry IV.*

The most sovereign prescription in Galen is but empirick; and, to this preservative, of no better report than a horse-drench. *Id. Coriolanus.*

O, let my sovereign turn away his face, And bid his ears a little while be deaf. *Shakspeare.*

Give me pardon,

That I, your vassal, have employed and pained Your unknown sovereignty. *Id.*

A water we call water of paradise, by that we do to it, is made very sovereign for health. *Bacon.*

To give laws unto a people to institute magistrates and officers over them; to punish and pardon malefactors; to have the sole authority of making war and peace, are the true marks of sovereignty. *Davies.*

Like the scum starved men did draw

From parboiled shoes and boots, and all the rest Which were with any sovereign fatness blest. *Donne.*

A mighty hunter thence he shall be stiled Before the Lord; as in despite of heaven, Or from heaven claiming second sovereignty. *Milton.*

None of us who now thy grace implore, But held the rank of sovereign queen before; Till giddy chance, whose malice never bears That mortal bliss should last for length of years, Cast us down headlong from our high estate. *Dryden.*

Be cool, my friend, and hear my muse dispense  
Some *sovereign* comforts drawn from common sense.

*Id.*

By my *sovereign*, and his fate, I swear,  
Renowned for faith in peace, for force in war,  
Oft our alliance other lands desired.

*Id.*

Jove's own tree,  
That holds the woods in awful *sovereignty*,  
Requires a depth of lodging in the ground ;  
High as his topmast boughs to heaven ascend,  
So low his roots to hell's dominion tend.

*Id.*

I will foresee, whene'er thy suit I grant,  
That I my much-loved *sovereignty* shall want,  
And her new beauty may thy heart invade.

*Id.*

Whether Esau, then, were a vassal to Jacob, and  
Jacob his *sovereign* prince by birthright, I leave the  
reader to judge.

*Locke.*

Nothing does so gratify a haughty humour as this  
piece of usurped *sovereignty* over our brethren.

*Government of the Tongue.*

Let us above all things possess our souls with awful  
apprehensions of the majesty and *sovereignty* of  
God.

*Rogers.*

Alexander's Grecian colonies in the Indies were  
almost exterminated by Sandrocottus ; Seleucus re-  
covered the *sovereignty* in some degree, but was forced  
to abandon to him the country along the Indus.

*Arbuthnot on Coins.*

**SOVEREIGN**, in matters of government, is  
applied to the supreme magistrate or magistrates  
of an independent government or state ; because  
their authority is only bounded by the laws of  
God and the laws of the state ; such are kings,  
princes, &c. See KING, MONARCH, PREROGA-  
TIVE, &c.

**SOVEREIGN**, the name of a modern as well as  
an ancient gold coin of Great Britain. In Henry  
I.'s reign a coin of this denomination was issued  
of 22s. value, and one twenty-fourth part of the  
weight of a pound of gold. In 34 Henry VIII.  
sovereigns were coined of 20s. value ; but, anno  
4 & 6 Edw. VI., they passed first for 24s. and  
then for 30s. By stat. 56 Geo. III. c. 68, sec. 11,  
declaring the gold coin to be the only legal ten-  
der, and that the same should be of the weight  
and fineness of the mint indenture, as to the de-  
nominations then in use, it was provided that  
gold coins of any new denomination should be  
of like standard in fineness, and proportionate  
weight. Sovereigns to pass for 20s., and half  
sovereigns to pass for 10s., were accordingly  
coined, weighing  $\frac{1}{2}$  parts of a guinea and half  
guinea respectively.

**SOVEREIGN POWER**, or **SOVEREIGNTY**, is the  
power of making laws ; for, wherever that power  
resides, all others must conform to it, and be  
directed by it, whatever appearance the outward  
form and administration of the government may  
put on. For it is at any time in the option of  
the legislature to alter that form and administra-  
tion by a new edict or rule, and to put the execu-  
tion of the laws into whatever hands it pleases ;  
and all the other powers of the state must obey  
the legislative power in the execution of their  
several functions, or else the constitution is at an  
end. In our constitution the law ascribes to the  
king the attribute of sovereignty ; but that is to  
be understood in a qualified sense, i. e. as su-  
preme magistrate, not as sole legislator ; as the  
legislative power is vested in the king, lords,

and commons, not in any of the three estates  
alone.

**SOUFFEL**, a river of France, which runs into  
the Rhine, four miles below Strasburg.

**SOUFFLOT** (James Germain), a celebrated  
French architect, born in 1713. He improved  
himself in Italy, and, on his return to France,  
was appointed superintendent of the royal build-  
ings, and those of Marly, the Thuirillies, &c. His  
greatest work was the church of St. Gene-  
vieve in Paris. He died in 1780.

**SOUFFRIER**, the most northerly of the lofty  
chain of mountains running through the centre  
of the island St. Vincent, and the highest of the  
whole, as computed by the most accurate survey  
that has as yet been taken. For some time pre-  
vious to April 1812, this memorable mountain had  
indicated much disquietude ; and, from the extra-  
ordinary frequency and violence of earthquakes  
(which are calculated to have exceeded 200  
within the preceding year), had portended some  
great movement or eruption. On Monday  
27th April, just as the plantation bells rung  
twelve at noon, an abrupt and dreadful crash  
from the mountain, with a severe concussion of  
the earth, and tremulous noise in the air, alarmed  
all around it. The resurrection of this fiery  
furnace was proclaimed in a moment by a vast  
column of thick, black,ropy smoke, like that of  
an immense glass-house, bursting forth at once,  
and mounting to the sky ; showering down sand,  
with gritty calcined particles of earth and favilla  
mixed, on all below. This, driven before the  
wind towards Wallibon and Morne Ronde,  
darkened the air like a cataract of rain, and  
covered the ridges, woods, and cane pieces, with  
light gray-colored ashes, resembling snow when  
slightly covered by dust. As the eruption in-  
creased, this continual shower expanded, destroy-  
ing every appearance of vegetation. At night a  
very considerable degree of ignition was observed  
on the lips of the crater ; but it is not asserted  
that there was as yet any visible ascension of  
flame. The same awful scene presented itself  
on Tuesday ; the fall of favilla and calcined pebbles  
still increasing, and the compact pitchy  
column from the crater rising perpendicularly to  
an immense height, with a noise at intervals like  
the muttering of distant thunder. On Wednes-  
day the 29th, all these menacing symptoms of  
horror and combustion still gathered more thick  
and terrific for miles around the dismal and half  
obscured mountain. The prodigious column  
shot up with quicker motion, dilating as it rose  
like a balloon. The sun appeared in total eclipse,  
and shed a meridian twilight over the island  
that aggravated the gloom of the scene, now com-  
pletely powdered over with falling particles. It  
was evident that the crisis was as yet to come ;  
that the burning fluid was struggling for a vent,  
and laboring to throw off the superincumbent  
strata and obstructions, which suppressed the  
ignivorous torrent. At night it was manifest  
that it had greatly disengaged itself from its  
burden, by the appearance of fire flashing now  
and then, flaking above the mouth of the crater.  
On Thursday 30th of April, the noise from the  
mountain had increased, and at times was incen-  
sant. About four o'clock it became still more

alarming, and, just before sun-set, the clouds reflected a bright copper color, suffused with fire. Scarcely had the day closed, when the flame burst at length pyramidically from the crater, through the mass of smoke; the rolling of the thunder became more awful and deafening; electric flashes quickly succeeded, attended with loud claps; and now, indeed, the hurly-burly began. Those only who have witnessed such a sight can form any idea of the magnificence and variety of the lightning and electric flashes; some forked zig-zag, playing across the perpendicular column from the crater; others shooting upwards from the mouth, like rockets of the most dazzling lustre; others like shells with their trailing fuses, flying in different parabolas, with the most vivid scintillations from the dark sanguine column, which now seemed inflexible and immovable by the wind. Shortly after seven P.M. the mighty caldron was seen to simmer, and the ebullition of lava to break out on the north-west side. This, immediately after boiling over the orifice, and flowing a short way, was opposed by the acclivity of a higher point of land, over which it was impelled by the immense tide of liquified fire that drove it on, forming the figure V in grand illumination. Sometimes, when the ebullition slackened, or was insufficient to urge it over the obstructing hill, it recoiled back, like a refluent billow from the rock, and then again rushed forward, impelled by fresh supplies, and scaling every obstacle, carrying rocks and woods together in its course down the slope of the mountain, until it precipitated itself down some vast ravine, concealed from the view by the intervening ridges of Morne Ronde. Vast globular bodies of fire were seen projected from the fiery furnace, and bursting, fell back into it, or over it, on the surrounding bushes, which were instantly set in flames. About four hours from the lava boiling over the crater it reached the sea, as could be observed from the reflection of the fire and the electric flashes attending it. About half-past one another stream of lava was seen descending to the east, towards Rabacca. At this time the first earthquake was felt; this was followed by showers of cinders, that fell with the hissing noise of hail during two hours. At three o'clock a rolling on the roofs of the houses indicated a fall of stones, which soon thickened, and at length descended in a rain of intermingled fire, that threatened at once the fate of Pompeii or Herculaneum. The crackling and coruscations from the crater at this period exceeded all that had yet passed. The eyes were struck with momentary blindness, and the ears stunned with the glomeration of sounds. People sought shelter in cellars, under rocks, or any where, for every where was nearly the same; and the miserable negroes, flying from their huts, were knocked down or wounded, and many killed in the open air. Several houses were set on fire. The estates situate in the immediate vicinity seemed doomed to destruction. Had the stones that fell been heavy in proportion to their size, not a living creature could have escaped. This dreadful rain of stones and fire lasted upwards of an hour, and was again succeeded by cinders from three till six o'clock in

the morning. Earthquake followed earthquake almost momentarily, or rather the whole of this part of the island was in a state of continued oscillation; not agitated by shocks, vertical or horizontal; but undulated, like water shaken in a bowl. The break of day, if such it could be called, was truly terrific. Darkness enveloped the mountain, and an' impenetrable haze hung over the sea, with black sluggish clouds of a sulphureous cast. The whole island was covered with favilla, cinders, scoria, and broken masses of volcanic matter. It was not until the afternoon that the muttering noise of the mountain sunk gradually into a solemn yet suspicious silence.' Such are the particulars of this sublime and tremendous scene, from commencement to catastrophe, as detailed in the Edinburgh Gazetteer.

**SOUGH, n. s.** Fr. *sous*. A subterraneous drain.

Yet could not such mines, without great pains and charges, if at all, be wrought; the dells would be so flown with waters, it being impossible to make any addits or *soughs* to drain them, that no gins or machines could suffice to lay and keep them dry.

*Ray on the Creation.*  
Another was found in sinking a *sough-pit*.

*Woodward.*

**SOUL, n. s.** Saxon *apel*; Dan. *siel*; Isl. *sual*; Goth. *sal*. The *Soul-less*, intellectual principle or spirit. **Soul-shot, n. s.** *Fit* of man: hence the vital principle or power; power; active or actuating power; human being; intelligent being: souled is furnished with mind: soulless, wanting it; low; mean: *soulshot* is explained below.

When death was overcome, he opened heaven as well to the believing Gentiles as Jews: heaven till then was no receptacle to the *souls* of either.

*Hooker.*

Thou almost makest me waver in my faith,  
To hold opinion with Pythagoras,  
That *souls* of animals infuse themselves  
Into the trunks of men.

*Shakespeare. Merchant of Venice.*

There is some *soul* of goodness in things evil,  
Would men observingly distil it out. *Shakespeare.*

Three wenches where I stood, cried,

'Alas, good *soul!*" *Id. Julius Caesar.*

The poor *soul* sat singing by a sycamore tree,

Sing all a green willow:

Her hand on her bosom, her head on her knee.

*Shakespeare.*

Slave, *soulless* villain, dog, O rarely base! *Id.*

Perhaps, for want of food, the *soul* may pine;  
But that were strange, since all things bad and good,  
Since all God's creatures mortal and divine,  
Since God himself, is her eternal food. *Davies.*

He remembered them of the promises, seals, and oaths, which by publick authority had passed for concluding this marriage; that these, being religious bonds betwixt God and their *souls*, could not by any politick act of state be dissolved. *Hayward.*

So natural is the knowledge of the *soul's* immortality, and of some ubi for the future reception of it, that we find some tract or other of it in most barbarous nations. *Heylyn.*

Thou sun, of this great world both eye and *soul*. *Milton.*

Eloquence the *soul*, song charms the *sense*. *Id.*

Charity, the *soul* of all the rest. *Id.*

Every *soul* in heaven shall bend the knee. *Id.*

Join voices, all ye living *souls*, ye birds,  
That singing up to heaven-gate ascend,  
Bear, on your wings, and in your notes, his praise.

*Id.*

Keep the poor *soul* no longer in suspense,  
Your charge is such as does not need defence.

*Dryden.*

Earth, air, and seas, through empty space would  
rowl,  
And heaven would fly before the driving *soul*. *Id.*  
Griping, and still tenacious of thy hold,  
Wouldst thou the Grecian chiefs, though largely  
souled,

Should give the prizes they had gained before? *Id.*  
The moral is the case of every *soul* of us.

*L'Fstrange.*

In the Saxon times there was a funeral duty to be paid, called pecunia sepulchralis et symbolum animæ, and in Saxon soulshot. *Ayliffe's Parergon.*

It is a republick; there are in it a hundred bourgeois, and about a thousand *souls*. *Addison's Italy.*

My state of health none care to learn;  
My life is here no *soul's* concern. *Swift.*

In common discourse and writing we leave out the words vegetative, sensitive, and rational; and make the word *soul* serve for all these principles.

*Watts.*

The eyes of our *souls* only then begin to see, when  
our bodily eyes are closing. *Law.*

That he wants caution, he must needs confess;  
But not a *soul* to give our arms success. *Young.*

*Watts.*

The *Soul* is the principle of perception, memory, intelligence, and volition in man; which, since the earliest era of philosophy, has furnished questions of difficult investigation, and materials of keen and important controversy. See METAPHYSICS. In the fourth volume of the Memoirs of the Literary and Philosophical Society of Manchester, the reader will find a very valuable paper by Dr. Farrier, proving, by evidence apparently complete, that every part of the brain has been injured without affecting the act of thought. An abridgment of that memoir would weaken its reasoning; which, built on matters of fact and experience, appears to us to have shaken the modern theory of the materialists from its very foundation.

As a sketch of their opinions we may observe that Dr. Priestley, rejecting the commonly received notion of matter, as an absolutely impenetrable, inert substance, and premising, that the powers of sensation or perception and thought, as belonging to man, have never been found but in conjunction with a certain organised system of matter, maintains that those powers necessarily exist in, and depend upon, such a system. In proof of this doctrine, it is alleged that, perception and thought are not incompatible with the properties of matter, considered as a substance extended and endued with the powers of attraction and repulsion; and, therefore, if one kind of substance be capable of supporting all the known properties of man, true philosophy, which will not authorize us to multiply causes or kinds of substance, without necessity, will forbid us to admit of any substance in the constitution of human nature essentially different from matter. The proper seat of the powers of perception and thought, according to this writer, is the brain; because, as far as we can judge, the faculty of thinking, and a certain state of the

brain, always accompany and correspond to one another; and there is no instance of any man retaining this faculty when his brain was destroyed; and, whenever that faculty is impeded or injured, there is sufficient reason to believe that the brain is disorded in proportion. Dr. Priestley apprehends that sensation and thought necessarily result from the organization of the brain, when the powers of mere life are given to the system, and that they follow of course, as much as the circulation of the blood follows respiration; but he professes to have no idea at all of the manner in which the power of perception results from organization and life.

To this it has been replied that Dr. Priestley's account does not answer to the common ideas of matter, or that it is not solid extension, or an impenetrable and inert substance, which is the only matter that is the object of natural philosophy; but something not solid, that exists in space, and so far agreeing with spirit; and consequently, if such matter is, as he asserts, the only matter possible, it will follow, not that we have no souls distinct from our bodies, but that we have no bodies distinct from our souls, and that all in nature is spirit. Besides, it has been farther urged, that a connexion and dependence by no means prove sameness.

It has been objected also by an able writer in the Edinb. Rev., that it is unphilosophical to class perception among the qualities of matter, when it is obvious that it is by means of perception alone that we get any notion of matter or its qualities; and that it is possible, with perfect consistency, to maintain the existence of our perceptions, and to deny that of matter altogether. The other qualities of matter are perceived by us; but perception cannot be perceived; all we know about it is, that it is that by which we perceive every thing else. It sounds somewhat absurd and unintelligible, to say that perception is that quality of matter by which it becomes conscious of its own existence, and acquainted with its other qualities. It is plain that this is not a quality, but a knowledge of qualities; and that the percipient must necessarily be distinct from that which is perceived by it. We must always begin with perception; and the followers of Berkeley will tell us that we must end there also. At all events, it certainly never entered into the head of any plain man to conceive that the faculty of perception itself was one of the qualities with which that faculty made him acquainted; or that it could possibly belong to a substance, which his earliest intimations and most indestructible impressions taught him to regard as something external and separate.

It is further alleged that to call perception a quality at all is a gross and unwarrantable abuse of language. Perception is an act or an event, a fact or a phenomenon, of which the percipient is conscious; but it cannot be intelligibly conceived as a quality; and, least of all, as a quality of that substance which is known to us as solid and extended. First, All the qualities of matter are perceived by the senses; but the sensation itself cannot be so perceived: nor is it possible to call it an object of sense, without the grossest

perversion of expression. Secondly, All the qualities of matter have a direct reference to space or extension, and are conceived in some measure as attributes or qualities of the space within which they exist. When we say that a particular body is solid, we mean merely that a certain portion of space is impenetrable; when we say that it is colored, we mean that the same portion of space appears of one hue,—and so of the other qualities; but sensation or thought is never conceived to occupy space, or to characterise it; nor can these faculties be at all conceived as definite portions of space, endued with perceptible properties. In the third place, all the primary qualities of matter are inseparable from it, and enter necessarily into its conception and definition. All matter must necessarily be conceived so extended, solid, and figured. It is obvious, however, that thought or sensation is not an inseparable attribute of matter, as by far the greater part of matter is entirely destitute of it; and it is found in connexion with those parts which we term organized, only while they are in a certain state, which we call alive. If it be said, however, that thought may resemble those accidental qualities of matter, such as heat or color, which are not inseparable or permanent; then we reply that none of these things can properly be termed matter, more than thought or sensation; they are themselves substances, or matter possessed of inseparable and peculiar qualities, as well as those which address themselves to the other senses. Light is a material substance, from which the quality of color is inseparable; and heat is a material substance, which has universally the quality of exciting the sensation of warmth. If thought be allowed to be a substance, in this sense, it will remain to show that it is material, by being referrible to space, and liable to attraction, repulsion, condensation or reflection, like heat or light.

The notions of the ancients were various with regard to the *seat of the soul*, and the mode of its action on the body. Some have maintained that it is equally diffused through every part of it; and others say that, whilst it influences and acts upon every part of the body, it has its principal residence in some particular part. Since it has been discovered, by the improvements in anatomy, that the nerves are the instruments of perception, and of the sensations accompanying it, and that the nerves ultimately terminate in the brain, it has been the general opinion of philosophers that the brain is the seat of the soul; and that it perceives the images that are brought there, and external things, only by means of them. Des Cartes, observing that the pineal gland (see ANATOMY) is the only part of the brain that is single, all the other parts being double, and thinking that the soul must have one seat, was thus determined to make that gland the soul's habitation; to which, by means of the animal spirits, intelligence is brought of all objects that affect the senses. Others have not thought proper to confine the habitation of the soul to the pineal gland, but to the brain in general or to some part of it, which they call the *sensorium*. Even the great Newton favored this opinion, though he proposes it only as a query, with that

modesty which distinguished him no less than his great genius. ‘Is not,’ he says, ‘the sensorium of animals the place where the sentient substance is present, and to which the sensible species of things are brought through the nerves and brain, that there they may be perceived by the mind present in that place? And is there not an incorporeal, living, intelligent, and omnipresent Being, who, in infinite space, as if it were in his sensorium, intimately perceives things themselves and comprehends them perfectly, as being present to them; of which things, that principle in us which perceives and thinks, discerns only in its little sensorium, the images brought to it through the organs of the *senses*?’ His great friend Dr. Clarke adopted the same sentiments with more confidence. In his papers to Leibnitz, we find the following passages. ‘Without being present to the images of the things perceived, the soul could not possibly perceive them. A living substance can only there perceive when it is present, either to the things themselves (as the omnipresent God is to the whole universe), or to the images of things (as the soul of man is in its proper sensory). Nothing can any more act, or be acted upon, where it is not present, than it can be where it is not. We are sure the soul cannot perceive what it is not present to, because nothing can act, or be acted upon, where it is not.’

Locke expresses himself in such a manner, that, for the most part, one would imagine that he thought the ideas, or images, of things, which he believed to be the immediate objects of perception, are impressions upon the mind itself; yet in some passages he rather places them in the brain, and makes them to be perceived by the mind there present. From such passages, cited by Dr. Reid (*ubi infra*), it may be inferred that he thought there are images of external objects conveyed to the brain. But whether he thought, with Des Cartes and Newton, that the images in the brain are perceived by the mind there present, or that they are imprinted on the mind itself, is not obvious. This hypothesis is founded on three assumptions; and, if any one of them fail, it must fall to the ground. 1. That the soul has its seat, or, as Mr. Locke calls it, its presence-room, in the brain: 2. That images are formed in the brain of all the objects of sense: 3. That the mind or soul perceives those images in the brain; and that it perceives not external objects immediately, but only perceives them by means of those images. The first assumption is not sufficiently established to warrant our founding other principles upon it. Of the second there is no proof or probability, with regard to any of the objects of sense. The brain has been dissected times innumerable, by the nicest anatomists; every part of it has been examined by the naked eye, and with the help of microscopes; but no vestige of any external object was ever found. The brain seems to be the most improper substance that can be imagined for receiving or retaining images, being a soft, moist, medullary substance. The third assumption is as improbable, as that there are images of external objects in the brain to be perceived. If our powers of perception, says Dr.

Reid, be not altogether fallacious, the objects we perceive are not in our brain, but without us.— Reid's Essays on the Intellectual Powers of Man. Ess. ii. ch. 4.

**SOUND**, *adj. & adv.* { Saxon *sunð*; Swed. *sund*; and Dan. *sund*; Goth. *sundus*; and Swed. *sann*; Lat. *sanus*? Hearty; healthy; stout; right; true; fast; solid: used also adverbially, as in the extract from Spenser: soundly and soundness follow these senses.

Let my heart be *sound* in thy statutes.

*Psalm cxix. 80.*

He hath received him safe and *sound*.

*Luke xv. 27.*

They reserved their titles, tenures, and signories whole and *sound* to themselves.

*Spenser's Ireland.*

The messenger approaching to him spake,  
But his waste words returned to him in vain;  
So *sound* he slept that nought might him awake.

*Faerie Queene.*

Now when that idle dream was to him brought,  
Unto that elfen knight he bad him fly,  
Where he slept *soundly*, void of evil thought. *Id.*

Whom although to know be life, and joy to make mention of his name; yet our *soundest* knowledge is to know that we know him not as indeed he is, neither can know him; and our safest eloquence concerning him is silence. *Hooker.*

The wisest are always the readiest to acknowledge, that *soundly* to judge of law is the weightiest thing which any man can take upon him. *Id.*

This presupposed, it may stand then very well with strength and *soundness* of reason, even thus to answer.

I am fallen out with my more headier will,  
To take the indisposed and sickly fit  
For the *sound* man. *Shakespeare. King Lear.*

He hath a heart as *sound* as a bell, and his tongue is the clapper; for what his heart thinks his tongue speaks. *Shakespeare.*

When Duncan is asleep,  
Whereto the rather shall this hard day's journey  
*Soundly* invite him. *Id. Macbeth.*

The doctrine of the church of England, expressed in the thirty-nine articles, is so *soundly* and orthodoxy settled, as cannot be questioned without extreme danger to our religion. *Bacon.*

They did ply  
My feet and hands with cords, and to the mast  
With other halsters made me *soundly* fast. *Chapman's Odyssey.*

The men are very strong and able of body; and therefore either give *sound* strokes with their clubs wherewith they fight, or else shoot strong shots with their bows. *Abbot.*

We can preserve  
Unhurt our minds, and understanding *sound*. *Milton.*

New waked from *soundest* sleep,  
Soft on the flowery herb I found me laid  
In balmy sweat. *Id. Paradise Lost.*

Who had so often in your aid  
So many ways been *soundly* paid. *Hudibras.*

The king visits all around,  
Comforts the sick, congratulates the *sound*;  
Honours the princely chiefs. *Dryden.*

But Capys, and the rest of *sounder* mind,  
The fatal present to the flames designed,  
Or to the deep. *Id.*

When the succession of ideas ceases, our perception of duration ceases with it, which every one experiences whilst he sleeps *soundly*. *Locke.*

The rules are *sound* and useful, and may serve your devotion. *Wake.*

*Sound*, and yet not trivial, catechetick institution. *Felton.*

Their nobility and gentry are one half ruined, banished, or converted: they all *soundly* feel the smart of the last Irish war. *Swift.*

Lesly is misled in his politicks; but he hath given proof of his *soundness* in religion. *Id.*

When a word, which originally signifies any particular object, is attributed to several other objects, on account of some evident reference or relation to the original idea, this is peculiarly called an analogical word; so a *sound* or healthy pulse, a *sound* digestion, *sound* sleep, are all so called, with reference to a *sound* and healthy constitution; but if you speak of *sound* doctrine, or *sound* speech, this is by way of resemblance to health, and the words are metaphorical. *Watts's Logick.*

As the health and strength, or weakness of our bodies, is very much owing to their methods of treating us when we were young; so the *soundness* or folly of our minds are not less owing to those first tempers and ways of thinking, which we eagerly received from the love, tenderness, authority, and constant conversation of our mothers. *Law.*

**SOUND**, *v. a., v. n., & n. s.* Fr. *sonder*, *sonde*, of Lat. *sub unda* (thus the Spanish have *sondear*). To search with a plummet; try depth, as of a wound; try or examine generally: as a verb neuter, to try with a sounding-line: a sound is a shallow sea, such as may be sounded.

In this secret there is a gulf, which while we live we shall never *sound*. *Hooker.*

You are, Hastings, much too shallow  
To *sound* the bottom of the after-trees.

Has he never before *sounded* you in this business? *Shakespeare. Henry IV.*

The *sound* of Denmark, where ships pay toll. *Camden.*

*Wake,*  
Behold I come, sent from the Stygian *sound*,  
As a dire vapour that had cleft the ground,  
T' ingender with the night, and blast the day. *Ben Jonson.*

Invites these lords, and those he meant to *sound*. *Daniel.*

Beyond this we have no more a positive distinct notion of infinite space than a mariner has of the depth of the sea, where having let down a large portion of his *sounding* line, he reaches no bottom. *Locke.*

I've *sounded* my Numidians, man by man,  
And find 'em ripe for a revolt. *Addison's Cato.*

The patient being laid on a table, pass the *sound* till it meet with some resistance. *Sharp's Surgery.*

Him young Thoosa bore, the bright increase  
Of Phorcys, dreaded in the *sounds* and seas. *Pope.*

**SOUND**, *n. s., v. n., & v. a.* { Fr. *son*; Span. *sonido*; Lat. *sonus*.

**SOUND'ING**, *adj.* { A noise; any thing audible or perceived by the ear; mere noise: to make a noise, or exhibit by way of sound: to cause to make a noise, or celebrate by sound: the soundboard is the part of an organ that diffuses the sound: sounding, sonorous

From you *sounded* out the word of the Lord. *1 Thess. i. 8.*

And many nymphs about them flocking round  
And many tritons which their horns did *sound*. *Spenser.*

Heaps of huge words uphoarded hideously  
With horrid sound, though having little sense,  
And thereby wanting due intelligence,  
Have marred the face of goodly poesy,  
And made a monster of their fantasy. *Id.*

Why do you start, and seem to fear  
Things that do sound so fair? *Shakspeare.*

Come, sisters, cheer we up his sprights,  
And shew the best of our delights;  
I'll charm the air to give a sound,  
While you perform your antick round. *Id. Macbeth.*

Dash a stone against a stone in the bottom of the  
water, and it maketh a sound: so a long pole struck  
upon gravel, in the bottom of the water, maketh a  
sound. *Bacon's Natural History.*

Try it without any soundboard along, only harp-  
wise at one end of the string. *Id.*

They being told there was small hope of ease  
To be expected to their evils from hence,  
Were willing at the first to give an ear  
To any thing that sounded liberty. *Ben Jonson's Catiline.*

This relation sounds rather like a chemical dream  
than a philosophical truth. *Wilkin's Mat. Mag.*

Trumpet once more to sound at general doom. *Milton.*

The warlike sound of trumpets loud. *Id.*  
Sun, sound his praise. *Id.*

As an organ, from one blast of wind,  
To many a row of pipes the soundboard breathes. *Id.*

Once Jove from Ida did both hosts survey,  
And, when he pleased to thunder, part the fray;  
Here heaven in vain that kind retreat should sound,  
The louder cannon have the thunder drowned. *Waller.*

That with one blast through the whole house does  
bound. *Dryden.*  
And first taught speaking trumpets how to sound. *Dryden.*

Whene'er he spoke, his voice was heard around,  
Loud as a trumpet with a silver sound. *Id.*

Obsolete words may then be revived, when more  
sounding or more significant than those in practice. *Id.*

He contented himself with doubtful and general  
terms, which might make no ill sound in men's ears. *Locke.*

Let us consider this proposition as to its meaning;  
for it is the sense not sound that must be the principle. *Id.*

That which is conveyed into the brain by the ear  
is called sound; though, till it affect the perceptive  
part, it be nothing but motion. *Locke.*

Thither the silver sounding lyres  
Shall call the smiling loves and young desires. *Pope.*

O lavish land! for sound at such expence?  
But then, she saves it in her bills for sense. *Young.*

SOUND, in physics, is a term of which it  
would be preposterous to offer any definition, as  
it may almost be said to express a simple idea;  
but when we consider it as a sensation, and still  
more when we consider it as a perception, it is  
proper to give a description of it; because this  
must involve certain relations of external things,  
and certain trains of events in the material world,  
which make it a proper object of philosophical  
discussion.

Sound then is that primary information which

we obtain of external things by means of the  
sense of hearing. This, however, does not ex-  
plain it; for were we in like manner to describe  
our sense of hearing, we should find ourselves  
obliged to say that it is the faculty by which we  
perceive sound. Languages are not the invention  
of philosophers; and we must not expect  
precision, even in the simplest cases. Our  
methods of expressing the information given us  
by our different senses are not similar, as a phi-  
losopher cautiously contriving language would  
make them. We have no word to express the  
primary or generic object of our sense of seeing;  
for we believe that even the vulgar consider  
light as the medium, but not the object. This  
is certainly the case with the philosopher. On  
the other hand, the words smell, sound, and  
perhaps taste, are conceived by most persons as  
expressing the immediate objects of the senses  
of smelling, hearing, and tasting. Smell and  
sound are hastily conceived as separate existences,  
and as mediums of information and of inter-  
course with the odoriferous and sounding bodies;  
and it is only the very cautious philosopher who  
distinguishes between the smell which he feels  
and the perfume which fills the room. It has  
required the long, patient, and sagacious consider-  
ation of the most penetrating geniuses, from  
Zeno to Sir Isaac Newton, to discover that what  
we call sound, the immediate external object of  
the sense of hearing, is nothing but a particular  
agitation of the parts of surrounding bodies  
acting by mechanical impulse on our organs;  
and that it is not any separate being, nor even a  
specific quality inherent in any particular thing,  
by which it can affect the organ, as we suppose  
with respect to a perfume, but merely a mode of  
existence competent to every atom of matter.  
And thus the description which we propose to  
give of sound must be a description of that  
state of external contiguous matter which is the  
cause of sound.

To discover this state of external body by  
which, without any farther intermedium of sub-  
stance or of operation, it affects our sensitive  
faculties, must be considered as a great step in  
science. It will show us at least one way by  
which mind and body may be connected. It is  
supposed that we have attained this knowledge  
with respect to sound. Our success, therefore,  
is a very pleasing gratification to the philosophic  
mind. It is still more important in another  
view: it has encouraged us to make similar at-  
tempts in other cases, and has supplied us with  
a fact to which an ingenious mind can easily  
fancy something analogous in many abstruse  
operations of nature, and thus it enables us to  
give some sort of explanation of them. Accord-  
ingly this use has been most liberally made of  
the mechanical theory of sound; and there is  
now scarcely any phenomenon, either of matter  
or mind, that has not been explained in a man-  
ner somewhat similar. But these explanations  
have done no credit to philosophy. They are for  
the most part strongly marked with that precipi-  
tate and self-conceited impatience which has  
always characterised the investigations conducted  
solely by ingenious fancy. The consequences of

this procedure have been no less fatal to the progress of true knowledge in modern times than in the schools of ancient Greece ; and the ethereal philosophers of modern times, like the followers of Aristotle, have filled ponderous volumes with nonsense and error. It is strange, however, that this should be the effect of a great and a successful step in philosophy : but the fault is in the philosophers, not in the science. Nothing can be more certain than the account which Newton has given of the propagation of a certain class of undulations in an elastic fluid. But this procedure of nature cannot be seen with distinctness and precision by any but well-informed mathematicians. They alone can rest with unshaken confidence on the conclusions legitimately deduced from the Newtonian theorems ; and even they can insure success only by treading with the most scrupulous caution the steps of this patient philosopher. But few have done this ; and we may venture to say that not one in ten of those who employ the Newtonian doctrines of elastic undulations for the explanation of other phenomena have taken the trouble, or indeed were able, to go through the steps of the fundamental proposition. But the general results are so plain, and admit of such impressive illustration, that they draw the assent of the most careless reader ; and all imagine that they understand the explanation, and perceive the whole procedure of nature. Emboldened therefore by this successful step in philosophy, they, without hesitation, fancy similar intermedijuns in other cases ; and, as air has been found to be a vehicle for sound, they have supposed that something which they call ether, somehow resembling air, is the vehicle of vision. Others have proceeded farther, and have held that ether, or another something like air, is the vehicle of sensation in general, from the organ to the brain.

It is of considerable importance to understand thoroughly this doctrine of sound, that we may see clearly and precisely in what it consists, and what is the precise mechanical fact in which it terminates. For this, or a fact perfectly similar, must terminate every explanation which we derive from this by analogy, however perfect the analogy may be. This previous knowledge must be completely possessed by every person who pretends to explain other phenomena in a similar manner. Then, and not till then, he is able to say what classes of phenomena will admit of the explanation : and, when all this is done, his explanation is still an hypothesis, till he is able to prove, from other indisputable sources, the existence and agency of the same thing analogous to the elastic fluid, from which all is borrowed. Such considerations would justify us for considering with great attention the nature of sound. But a work like this will not give room for a full discussion ; and we must refer our readers to the writers who treat it more at large. Much information may be got from the authors of the two last centuries, such as lord Verulam, Kircher, Mersennus, Cafferius in his great work *De Voce et Auditu* ; Perrault, in his *Dissertation du Bruit*, Murshenbroeck, in his great System of Natural Philosophy, in 3 vols. 4to., and in his *Essays de Physique* ; and the writings of the physiologists

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of the present age. We also refer to what has been said in the article *Acoustics*. At present, therefore, we must content ourselves with giving a short history of the speculations of philosophers on this subject, tracing out the steps by which we have arrived at the knowledge which we have of it. We apprehend this to be of great importance, because it shows us what kind of evidence we have for its truth, and the paths which we must shun if we wish to proceed farther : and we trust that the progress which we have made will appear to be so real, and the object to be attained so alluring to a truly philosophical mind, that men of genius will be incited to exert their utmost efforts to pass the present boundaries of our real progress.

In the infancy of philosophy, sound was held to be a separate existence, something which would exist, although no hearing animal existed. This was conceived as wafted through the air to our organ of hearing, which it was supposed to affect in a manner resembling that in which our nostrils are affected when they give us the sensation of smell. It was one of the Platonic species, fitted for exciting the intellectual species, which is the immediate object of the soul's contemplation. Yet, even in those early years of science, there were some, and, in particular, the celebrated founder of the Stoic school, who held that sound, that is, the cause of sound, was only the particular motion of external gross matter, propagated to the ear, and there producing that agitation of the organ by which the soul is immediately affected with the sensation of sound. Zeno, as quoted by Diogenes Laertius (lib. vii. § 158), says, 'Hearing is produced by the air which intervenes between the thing sounding and the ear. The air is agitated in a spherical form, and moves off in waves, and falls on the ear, in the same manner as the water in a cistern undulates in circles when a stone has been thrown into it.' The ancients were not remarkable for precision, either of conception or argument, in their discussions ; and they were contented with a general and vague view of things. Some followed the Platonic notions, and many the opinion of Zeno, but without any farther attempts to give a distinct conception of the explanation, or to compare it with experiment. But in later times, during the ardent researches in the seventeenth century into the phenomena of nature, this became an interesting subject of enquiry. The invention of the air-pump gave the first opportunity of deciding by experiment whether the elastic undulations of air were the causes of sound : and the trial fully established this point ; for a bell rung in *vacuo* gave no sound, and one rung in condensed air gave a very loud one. It was therefore received as a doctrine in general physics that air was the vehicle of sound. The celebrated Galileo, the parent of mathematical philosophy, discovered the nature of that connexion between the lengths of musical chords and the notes which they produced, which had been observed by Pythagoras, or learned by him in his travels in the east, and which he made the foundation of a refined and beautiful science, the theory of music. Galileo showed that the real connexion subsisted between the tones and the

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vibrations of these cords, and that their different degrees of acuteness corresponded to the different frequency of their vibrations. The very elementary and familiar demonstration which he gave of this connexion did not satisfy the curious mathematicians of that inquisitive age, and the mechanical theory of musical chords was prosecuted to a great degree of refinement. In the course of this investigation, it appeared that the chord vibrated in a manner precisely similar to a pendulum vibrating into a cycloid. It must therefore agitate the air contiguous to it in the same manner; and thus there is a particular kind of agitation which the air can receive and maintain which is very interesting. Sir Isaac Newton took up this question as worthy of his notice; and endeavoured to ascertain with mathematical precision the mechanism of this particular class of undulations, and gave us the fundamental theorems concerning the undulations of elastic fluids, which make the forty-seven, &c., propositions of Book II. of his *Principles of Natural Philosophy*. They have been (perhaps hastily) considered as giving the fundamental doctrines concerning the propagation of sound. They are therefore given in this work in the article *ACOUSTICS*; and a variety of facts are related, in the article *PNEUMATICS*, to show that such undulations actually obtain in the air of our atmosphere, and are accompanied by a set of phenomena of sound, which precisely tally or correspond to all the mechanical circumstances of these undulations. In the mean time, the anatomists and physiologists were busily employed in examining the structure of our organs of hearing. Impressed with the validity of this doctrine of aerial undulations being the causes of sound, their researches were always directed with a view to discover those circumstances in the structure of the ear which rendered it an organ susceptible of agitations from this cause; and they discovered many which appeared as contrivances for making it a drum, on which the aerial undulations from without must make forcible impulses, so as to produce very sonorous undulations in the air contained in it. These therefore they considered as the immediate objects of sensation, or the immediate causes of sound. But some anatomists saw that this would not afford a full account of the matter; for, after a drum is agitated, it has done all that it can do; it has produced a noise. But a farther process goes on in our ear: There is behind the membrane, which is the head of this drum, a curious mechanism, which communicates the agitations of the membrane (the only thing acted on by the undulating air) to another chamber of most singular construction, where the auditory nerve is greatly expanded. They conceive, therefore, that the organ called the drum does not act as a drum, but in some other way. Indeed, it seems bad logic to suppose that it acts as a drum merely by producing a noise. This is in no respect different from the noise produced out of the ear; and, if it is to be heard as a noise, we must have another ear by which it may be heard, and this ear must be another such drum; and this must have another, and so on for ever. It is like the inaccurate notion that vision is the

contemplation of the picture on the retina. See *ANATOMY, Index*. These anatomists attended therefore to the structure. Here they observed a prodigious unfolding of the auditory nerve of the ear, which is curiously distributed through every part of this cavity, lining its sides, hung across it like a curtain, and sending off fibres in every direction, so as to leave hardly a point of it unoccupied. They thought the machinery contained in the drum peculiarly fitted for producing undulations of the air contained in this labyrinth, and that by these agitations of the air the contiguous fibres of the auditory nerve are impelled, and thus we get the sensation of sound. The cavity intervening between the external air and this inner chamber appeared to these anatomists to have no other use than to allow a very free motion to the stapes or little piston that is employed to agitate the air in the labyrinth. This piston condenses on a very small surface the impulse which it receives from a much larger surface, strained by the malleus on the *entry* of the tympanum, on purpose to receive the gentle agitations of the external air in the outer canal. This membranous surface could not be agitated unless completely detached from every thing around it; therefore all animals which have this mechanism have it in a cavity containing only air. But they held that nature had even taken precaution to prevent this cavity from acting as a drum, by making it of such an irregular rambling form; for it is by no means a cavity of a symmetrical shape, like a vessel, but rather resembles the rambling holes and blebs which are often seen in a piece of bread, scattered through the substance of the cranium, and communicating with each other by small passages. The whole of these cavernulae are lined with a softish membrane, which still farther unfits this cavity for producing sound. This reasoning is specious, but not very conclusive. We might even assert that this anfractuous form, with narrow passages, is well fitted for producing noise. If we place the ear close to the small hole in the side of a military drum, we shall hear the smallest tap of the drumstick like a violent blow. The lining of the cavernulae is nervous, and may therefore be strongly affected in the numerous narrow passages between the cells.

While these speculations were going on, with respect to the ear of the breathing animals, observations were occasionally made on other animals, such as reptiles, serpents, and fishes, which give undoubted indications of hearing; and many very similar facts were observed or recollect ed, where sounds are communicated through or by means of solid bodies, or by water: therefore, without enquiring how or by what kind of mechanism it is brought about, it became a very general belief among physiologists that all fishes, and perhaps all animals hear, and that water in particular is a vehicle of sound. In 1767 or 1768 an ingenious gentleman, at the suggestion of the late professor of astronomy in the university of Glasgow, made an experiment in a lake in that neighbourhood, by striking a large hand bell under water, and heard it very distinctly and strongly when his head was plunged in the water at the distance of more than 1200 feet.

Many experiments are mentioned by Kircher and others on the communication of sound through solid bodies, such as masts, yards, and other long beams of dry fir, with similar results. Dr. Monro has published a particular account of very curious experiments on the propagation of sound through water, in his Dissertation on the Physiology of Fishes; so that it now appears that air is by no means the only vehicle of sound. In 1760 Cotunni published his important discovery that the labyrinth or inmost cavity of the ear in animals is completely filled with water. This, after some contest, has been completely demonstrated (see Meckle Junior de Labyrinthi Auris Contentis, Argentor, 1777), and it seems now to be admitted by all. This being the case, our notions of the immediate cause of sound must undergo a great revolution, and a new research must be made into the way in which the nerve is affected; for it is not enough that we substitute the undulations of water for those of air in the labyrinth. The well informed mechanician will see at once, that the vivacity of the agitations of the nerve will be greatly increased by this substitution; for if water be perfectly elastic, through the whole extent of the undulatory agitation which it receives, its effect will be greater in proportion to its specific gravity: and this is confirmed by an experiment very easily made. Immerse a table bell in water contained in a large thin glass vessel. Strike it with a hammer. The sound will be heard as if the bell had been immediately struck on the sides of the vessel. The filling of the labyrinth of the ear with water is therefore an additional mark of the wisdom of the Great Artist. But this is not enough for informing us concerning the ultimate mechanical event in the process of hearing. The manner in which the nerve is exposed to these undulations must be totally different from what was formerly imagined. The filaments and membranes which have been described by former anatomists must have been found by them in a state quite unlike to their situation and condition in the living animal. Accordingly the most eminent anatomists of Europe seem at present in great uncertainty as to the state of the nerve, and are keenly occupied in observations to this purpose. The descriptions given by Monro, Scarpa, Camper, Comparetti, and others, are full of most curious discoveries, which make almost a total change in our notions of this subject, and will, we hope, be productive of most valuable information. Scarpa has discovered that the solid cavity called the labyrinth, contains a threefold expansion of the auditory nerve. One part of it, the cochlea, contains it in a fibrillous state, ramified in a most symmetrical manner through the whole of the zona molis of the lamina spiralis, where it anastomoses with another production of it diffused over the general lining of that cavity. Another department of the nerve, also in a fibrous state, is spread over the external surface of a membranaceous bag, which nearly fills that part of the vestibule into which the semicircular canals open, and also that orifice which receives the impressions of the stapes. This bag sends off tubular membranaceous ducts, which, in like

manner, nearly fill these semicircular canals. A third department of the nerve is spread over the external surface of another membranaceous bag, which lies between the one just now mentioned and the cochlea, but, having no communication with either, almost completely filling the remainder of the vestibule. Thus the vestibule and canals seem only a case for protecting this sensitive membranaceous vessel, which is almost but not altogether in contact with the osseous case, being separated by a delicate and almost fluid cellular substance. The fibrillous expansion of the nerve is not indiscriminately diffused over the surface of these sacculi, but evidently directed to certain foci, where the fibres are constipated. And this is the last appearance of the fibrous state of the nerve; for, when the inside of these sacculi is inspected, no fibres appear, but a pulp (judged to be nervous from its similarity to other pulpy productions of the brain) adhering to the membranaceous coat, and not separable from it by gently washing it. It is more abundant, that is of greater thickness, opposite to the external fibrous foci. No organic structure could be discovered in this pulp, but it probably is organised; for, besides this adhering pulp, the water in the sacculi was observed to be clammy or mucous; so that in all probability the vascular or fibrous state of the nerve is succeeded by an uninterrupted production (perhaps columnar like basalt, though not cohering); and this at last ends in simple dissemination, symmetrical, however, where water and nerve are alternate in every direction. To these observations of Scarpa, Comparetti adds the curious circumstances of another and regular tympanum in the foramen rotundum, the cylindric cavity of which is enclosed at both ends by a fine membrane. The membrane which separates it from the cochlea appears to be in a state of variable tension, being drawn up to an umbo by a cartilaginous speck in its middle, which he thinks adheres to the lamina spiralis, and thus serves to strain the drumhead as the malleus strains the great membrane known to all. These are most important observations, and must greatly excite the curiosity of a truly philosophical mind, and deserve the most careful enquiry into their justness. If these are accurate descriptions of the organ, they seem to conduct us farther into the secrets of nature than any thing yet known. They promise to give us the greatest step yet made in physiology, viz. to show us the last mechanical fact which occurs in the long train interposed between the external body and the incitement of our sensitive system. But there are, as yet, great and essential differences in the description given by those celebrated naturalists. There seems to be no abatement of ardor in the researches of the physiologists; and they will not remain long ignorant of the truth or mistake in the accounts given by Scarpa and Comparetti.

To illustrate the cause of sound, it may be observed, 1st, That a motion is necessary in the sonorous body for the production of sound. 2dly, That this motion exists first in the small and insensible parts of the sonorous bodies, and is excited in them by the mutual collision against

each other, which produces the tremulous motion so observable in bodies that have a clear sound, as bells, musical chords, &c. 3dly, That this motion is communicated to, or produces a like motion in the air, or such parts of it as are fit to receive and propagate it. Lastly, That this motion must be communicated to those parts that are the proper and immediate instruments of hearing. Now that motion of a sonorous body which is the immediate cause of sound may be owing to two different causes; either the percussion between it and other hard bodies, as in drums, bells, chords, &c.; or the beating and clashing of the sonorous body and the air immediately against each other, as in flutes, trumpets, &c. But in both these cases the motion, which is the consequence of the mutual action, as well as the immediate cause of the sonorous motion which the air conveys to the ear, is supposed to be an invisible, tremulous, or undulating motion in the small and insensible parts of the body. Perrault adds that the visible motion of the grosser parts contributes no otherwise to sound than as it causes the invisible motion of the smaller parts, which he calls particles, to distinguish them from the sensible ones, which he calls parts, and from the smallest of all, which are called corpuscles.

The sonorous body having made its impression on the contiguous air, that impression is propagated from one particle to another, according to the laws of pneumatics. A few particles, for instance, driven from the surface of the body, push or press their adjacent particles into a less space; and the medium, as it is thus rarefied in one place, becomes condensed in the other; but the air that is compressed in the second place is, by its elasticity, returned back again, both to its former place and its former state; and the air contiguous to that is compressed; and the like obtains when the air less compressed, expanding itself, a new compression is generated. Therefore from each agitation of the air there arises a motion in it analogous to the motion of a wave on the surface of the water; which is called a wave or undulation of air. In each wave the particles go and return back again through very short equal spaces; the motion of each particle being analogous to the motion of a vibrating pendulum while it performs two oscillations; and most of the laws of the pendulum, with very little alteration, being applicable to the former.

Sounds are as various as are the means that concur in producing them. The chief varieties result from the figure, constitution, quantity, &c., of the sonorous body; the manner of percussion, with the velocity, &c., of the consequent vibration; the state and constitution of the medium; the disposition, distance, &c., of the organ; the obstacles between the organ and the sonorous object and the adjacent bodies. The most notable distinction of sounds, arising from the various degrees and combinations of the conditions above-mentioned, are into loud and low (or strong and weak); into grave and acute (or sharp and flat, or high and low); and into long and short. The management of which is the office of music. Euler is of opinion that no sound making fewer vibrations than thirty in a second,

or more than 7520, is distinguishable by the human ear. According to this doctrine, the limit of our hearing, as to acute and grave, is an interval of eight octaves.—Tentam. Nov. Theor. Mus. cap. 1, sect. 13.

The velocity of sound is the same with that of the aerial waves, and does not vary much, whether it go with the wind or against it. By the wind indeed a certain quantity of air is carried from one place to another; and the sound is accelerated while its waves move through that part of the air, if their direction be the same as that of the wind. But, as sound moves vastly swifter than the wind, the acceleration it will hereby receive is but inconsiderable; and the chief effect we can perceive from the wind is that it increases and diminishes the space of the waves, so that by the help of it the sound may be heard to a greater distance than otherwise it would.

That the air is the usual medium of sound appears from various experiments in rarefied and condensed air. In an unexhausted receiver a small bell may be heard to some distance; but when exhausted it can scarcely be heard at the smallest distance. When the air is condensed, the sound is louder in proportion to the condensation, or quantity of air crowded in; of which there are many instances in Hauksbee's experiments, in Dr. Priestley's, and others. Besides, sounding bodies communicate tremors to distant bodies; for example, the vibrating motion of a musical string puts others in motion, whose tension and quantity of matter dispose their vibrations to keep time with the pulses of air propagated from the string that was struck. Galileo explains this phenomenon by observing that a heavy pendulum may be put in motion by the least breath of the mouth, provided the blasts be often repeated, and keep time exactly with the vibrations of the pendulum; and also by the like art in raising a large bell.

It is not air alone that is capable of the impressions of sound, but water also; as is manifest by striking a bell under water, the sound of which may plainly enough be heard, only not so loud, and also a fourth deeper, according to good judges in musical notes. And Mersenne says, a sound made under water is of the same tone or note as if made in air and heard under the water.

The velocity of sound, or the space through which it is propagated in a given time, has been very differently estimated by authors who have written concerning this subject. Roberval states it at the rate of 560 feet in a second; Gassendus at 1473; Mersenne at 1474; Duhamel, in the History of the Academy of Sciences at Paris, at 1338; Newton at 968; Derham, in whose measure Flamsteed and Halley acquiesce, at 1142. The reason of this variety is ascribed by Derham partly to some of those gentlemen using strings and plummets instead of regular pendulums; and partly to the too small distance between the sonorous body and the place of observation; and partly to no regard being had to the winds. But by the accounts since published by M. Cassini de Thury, in the Memoirs of the Royal Academy of Sciences at Paris, 1738, where cannon were fired at various as well as great distances,

under many varieties of weather, wind, and other circumstances, and where the measures of the different places had been settled with the utmost exactness, it was found that sound was propagated, on a medium, at the rate of 1038 French feet in a second of time. But the French foot is in proportion to the English as fifteen to sixteen; and consequently 1038 French feet are equal to 1107 English feet. Therefore the difference of the measures of Derham and Cassini is thirty-five English feet, or thirty-three French feet, in a second. The medium velocity of sound therefore is nearly at the rate of a mile, or 5280 feet, in four seconds and two-thirds, or a league in fourteen seconds, or thirteen miles in a minute. But sea miles are to land nearly as seven to six; and therefore sound moves over a sea mile in five seconds and one-third nearly, or a sea league in sixteen seconds. Farther, it is a common observation, that persons in good health have about seventy-five pulsations, or beats of the artery at the wrist, in a minute; consequently in seventy-five pulsations sound flies about thirteen land miles, or eleven sea miles and one-seventh, which is about one land mile in six pulses, or one sea mile in seven pulses, or a league in twenty pulses. Hence the distance of objects may be found by knowing the time employed by sound in moving from those objects to an observer. For example, on seeing the flash of a gun at sea, if fifty-four beats of the pulse at the wrist were counted before the report was heard; the distance of the gun will easily be found by dividing fifty-four by twenty, which gives 2·7 leagues, or about eight miles.

In an ingenious treatise, published 1790, by Mr. G. Saunders, on theatres, he relates many experiments made by himself on the nature and propagation of sound; and shows the great effect of water, and some other bodies, in conducting of sound, probably by rendering the air more dense near them. Some of his conclusions and observations are as follow:—Earth may be supposed to have a twofold property with respect to sound. Being very porous it absorbs sound, which is counteracted by its property of conducting sound, and occasions it to pass on a plane, in an equal proportion to its progress in air, unencumbered by any body. If a sound be sufficiently intense to impress the earth in its tremulous quality, it will be carried to a considerable distance, as when the earth is struck with any thing hard, as by the motion of a carriage, horses' feet, &c. Plaster is proportionally better than loose earth for conducting sound as it is more compact. Clothes of every kind, particularly woollen cloths, are very prejudicial to sound: their absorption of sound may be compared to that of water, which they greedily imbibe.

A number of people seated before others, as in the pit or gallery of a theatre, do considerably prevent the voice reaching those behind; and hence it is that we hear so much better in the front of the galleries, or of any situation, than behind others, though we may be nearer to the speaker. Our seats, rising so little above each other, occasion this defect, which would be remedied cou'l we have the seats to rise their

whole height above each other as in the ancient theatres. Paint has generally been thought unfavorable to sound, from its being so to musical instruments, whose effects it quite destroys. Musical instruments mostly depend on the vibrative or tremulous property of the material, which a body of color hardened in oil must very much alter; but we should distinguish that this regards the formation of sound, which may not altogether be the case in the progress of it.

Water has been little noticed with respect to its conducting sound; but it will be found to be of the greatest consequence. ‘I had often,’ says our author, ‘perceived in newly-finished houses that, while they were yet damp, they produced echoes; but that the echoing abated as they dried. When I made the following experiment there was a gentle wind; consequently the water was proportionally agitated. I chose a quiet part of the river Thames, near Chelsea Hospital, and with two boats tried the distance the voice would reach. On the water we could distinctly hear a person read at the distance of 140 feet, on land at that of seventy-six. It should be observed that on land no noise intervened; but on the river some noise was occasioned by the flowing of the water against the boats: so that the difference on land and on water must be much more.’

‘Watermen observe that when the water is still, and the weather quite calm, if no noise intervene, a whisper may be heard across the river; and that with the current it will be carried to a much greater distance, and vice versa against the current. Mariners well know the difference of sound on sea and land.

‘When a canal of water was laid under the pit floor of the theatre of Argentino, at Rome, a surprising difference was observed; the voice has since been heard at the end very distinctly, where it was before scarcely distinguishable. It is observable that, in this part, the canal is covered with a brick arch, over which there is a quantity of earth, and the timber floor over all. The villa Simonetta near Milan, so remarkable for its echoes, is entirely over arcades of water. Another villa near Rouen, remarkable for its echo, is built over subterraneous cavities of water. A reservoir of water domed over, near Stanmore, has a strong echo.

‘I do not remember ever being under the arches of a stone bridge that did not echo; which is not always the case with similar structures on land. A house in Lambeth Marsh, inhabited by Mr. Turtle, is very damp during winter, when it yields an echo which abates as the house becomes dry in summer.’ Kircher observes that echoes repeat more by night than during the day; he makes the difference to be double. Dr. Plot says the echo in Woodstock park repeated seventeen times by day, and twenty by night. And Addison’s experiment at the villa Simonetta was in a fog, when it produced fifty-six repetitions.

‘After all these instances I think little doubt can remain of the influence water has on sound; and I conclude that it conducts sound more than any other body whatever. After water, stone may be reckoned the best conductor of sound. To what cause it may be attributed I leave to

future enquiries: I have confined myself to speak of facts only as they appear. Stone is sonorous, but gives a harsh disagreeable tone, unfavorable to music.'

'Brick, in respect to sound, has nearly the same properties as stone. Part of the garden wall of the late W. Pitt, esq., of Kingston in Dorsetshire, conveys a whisper to the distance of nearly 200 feet.

'Wood is sonorous, conductive, and vibrative; of all materials it produces a tone the most agreeable and melodious; and it is therefore the fittest for musical instruments, and for lining of rooms and theatres. The common notion that whispering at one end of a long piece of timber would be heard at the other end, I found by experiment to be erroneous. A stick of timber sixty-five feet long being slightly struck at one end, a sound was heard at the other, and the tremor very perceptible: which is easily accounted for when we consider the number or length of the fibres that compose it, each of which may be compared to a string of catcut.'

SOUNDS are distinguished, with regard to music, into simple and compound, and that two ways. In the first, a sound is said to be compound, when a number of successive vibrations of the sonorous body, and the air, come so fast upon the ear that we judge them the same continued sound; as in the phenomenon of the circle of fire, caused by putting the fire-end of a stick in a quick circular motion; where, supposing the end of the stick in any point of the circle, the idea we receive of it there continues till the impression is renewed by a sudden return. A simple sound, with regard to this composition, should be the effect of a single vibration, or of so many vibrations as are necessary to raise in us the idea of sound. In the second sense of composition, a simple sound is the product of one voice, or one instrument, &c. A compound sound consists of the sounds of several distinct voices or instruments, all united in the same individual time and measure of duration, that is, all striking the ear together, whatever their other differences may be. But in this sense, again, there is a two-fold composition; a natural and an artificial one.

Natural composition is that proceeding from the manifold reflections of the first sound from adjacent bodies, where the reflections are not so sudden as to occasion echoes, but are all in the same tune with the first note. Artificial composition, which alone comes under the musician's province, is that mixture of several sounds which, being made by art, the ingredient sounds are separable and distinguishable from one another. In this sense the distinct sounds of several voices or instruments, or several notes of the same instrument, are called simple sounds, in contradistinction to the compound ones, in which, to answer the end of music, the simples must have such an agreement in all relations, chiefly as to acuteness and gravity, as that the ear may receive the mixture with pleasure.

Another distinction of sounds with regard to music is that by which they are said to be smooth and even, or rough and harsh, also clear and hoarse: the cause of which differences de-

pends on the disposition and state of the sonorous body, or the circumstances of the place; but the ideas of the differences must be sought from observation.

Smooth and rough sounds depend principally on the sounding body; of these we have a notable instance in strings that are uneven, and not of the same dimension or constitution throughout. Perrault, to account for roughness and smoothness, maintains, there is no such thing as a simple sound; but that the sound of the same chord or bell is a compound of the sounds of the several parts of it; so that where the parts are homogeneous, and the dimensions or figure uniform, there is always such a perfect mixture and union of all the sounds as makes one uniform and smooth sound: contrary conditions produce harshness. In effect, a likeness of parts and figure make a uniformity of vibrations, by which a great number of similar and coincident motions conspire to fortify and improve each other, and unite, for the more effectual producing of the same effect. This account he confirms from the phenomenon of a bell which differs in tone according to the part it is struck in; and yet, strike it any where, there is a motion over all the parts. Hence he considers the bells as composed of an infinite number of rings, which, according to their different dimensions, have different tones, as chords or strings of different lengths have; and, when struck, the vibrations of the parts immediately struck specify the tone, being supported by a sufficient number of consonant tones in other parts. This must be allowed, that every note of a stringed instrument is the effect of several simple sounds; for there is not only the sound resulting from the motion of the string, but that from the motion of the parts of the instrument, which has a considerable effect in the total sound, as is evident from hence that the same string on different violins sounds very differently.

But Perrault affirms the same of every string without considering the instrument. Every part of the string, he says, has its particular vibrations, different from the gross and sensible vibrations of the whole; and these are the causes of different motions and sounds in the particles, which uniting compose the whole sound of the string, and make a uniform composition, in which the tone of the particular part struck prevails, and all the others mix under a due subordination with it, so as to make the composition smooth and agreeable. If the parts be unevenly or irregularly constituted, the sound is harsh; which is the case in what we call false strings, and various other bodies, which, for this reason, have no certain and distinct tone, but a composition of several tones, which do not unite and mix, so as to have one predominant to specify the total tone. As to clear and hoarse sounds, they depend on circumstances that are accidental to the sonorous body; thus, a voice and instrument will be hollow and hoarse, if raised within an empty hogshead, that yet is clear and bright out of it: the effect is owing to the mixture of other and different sounds, raised by reflections, which corrupt and change the species of the primitive sounds. For sounds to be fit to obtain

the end of music, they ought to be smooth and clear, possessing especially the first quality: since, without this, they cannot have one certain and discernible tone. Dr. Burney remarks that enquiries concerning the absolute production and modification of sound belong to physics; whereas a musician only examines sounds comparatively one with the other, and considers their proportions and relation as divided into concords and discords.

**The Soundboard** is the principal part of an organ. This soundboard, or summer, is a reservoir into which the wind, drawn in by the bellows, is conducted by a port vent, and thence distributed into the pipes placed over the holes of its upper part. This wind enters them by valves, which open by pressing upon the stops or keys, after drawing the registers, which prevent the air from going into any of the other pipes beside those it is required in.

**Soundboard, or Sounding-Board**, denotes also a thin broad board placed over the head of a public speaker, to enlarge and extend or strengthen his voice. Soundboards, in theatres, are found by experience to be of no service; their distance from the speaker being too great to be impressed with sufficient force. But soundboards immediately over a pulpit have often a good effect, when made of a just thickness, and according to certain principles.

**Sounding**, the operation of trying the depth of the sea, and the nature of the bottom, by means of a plummet sunk from a ship to the bottom. There are two plummets used for this purpose in navigation, one of which is called the hand-lead, weighing about eight or nine pounds, and the other the deep sea-lead, which weighs from twenty-five to thirty pounds. Both are shaped like the frustum of a cone or pyramid. The former is used in shallow waters, and the latter at a great distance from the shore; particularly on approaching the land after a sea voyage. Accordingly the lines employed for this purpose are called the deep-sea lead-line, and the hand lead-line. The hand lead-line, which is usually twenty fathoms in length, is marked at every two or three fathoms; so that the depth of the water may be ascertained either in the day or night. At the depth of two and three fathoms there are marks of black leather; at five fathoms there is a white rag; at seven a red rag; at ten black leather; at thirteen black leather; at fifteen a white rag; and at seventeen a red ditto. Sounding with the hand-lead, which is called heaving the lead by seamen, is generally performed by a man who stands in the main chains to windward. Having the line quite ready to run out without interruption, he holds it nearly at the distance of a fathom from the plummet; and having swung the latter backwards and forwards three or four times in order to acquire the greater velocity, he swings it round his head, and thence as far forward as is necessary; so that, by the lead's sinking whilst the ship advances, the line may be almost perpendicular when it reaches the bottom. The person sounding then proclaims the depth of the water in a kind of song resembling the cries of hawkers in a city. Thus if the mark of five fathoms is close to the surface of the

water, he calls, ‘By the mark five!’ and as there is no mark at four, six, eight, &c., he estimates those numbers, and calls, ‘By the dip four,’ &c. If he judges it to be a quarter or a half more than any particular number, he calls, ‘And a quarter five!’ ‘And a half four!’ &c. If he conceives the depth to be three-quarters more than a particular number, he calls it a quarter less than the next: thus, at four fathoms and three-fourths he calls, ‘A quarter less five!’ and so on. The deep sea-lead is marked with two knots at twenty fathoms, three at thirty, four at forty, and so on to the end. It is also marked with a single knot in the middle of each interval, as at twenty-five, thirty-five, forty-five fathoms, &c. To use this lead more effectually at sea, or in deep water on the sea-coast, it is usual previously to bring to the ship, in order to retard her course; the lead is then thrown as far as possible from the ship on the line of her drift, so that, as it sinks, the ship drives more perpendicularly over it. The pilot, feeling the lead strike the bottom, readily discovers the depth of the water by the mark on the line nearest its surface. The bottom of the lead being also well rubbed over with tallow retains the distinguishing marks of the bottom, as shells, ooze, gravel, &c., which naturally adhere to it. The depth of the water, and the nature of the ground, which is called the soundings, are carefully marked in the log-book, as well to determine the distance of the place from the shore as to correct the observations of former pilots.

**Sound Post**, a post placed within side of a violin, &c. as a prop between the back and the belly of the instrument, and nearly under the bridge.

**Soup, n. s.** Sax. *ruppa*; Fr. *soupe*; Swed. *soppa*. Strong broth; a decoction of flesh for the table.

Spongy morells in strong ragouts are found, And in the *soup* the slimy snail is drowned.

*Guy's Trivia*

Let the cook daub the back of the footman's new livery; or, when he is going up with a dish of *soup*, let her follow him softly with a ladle full. *Swift.*

**Soup, Portable, or Dry Soup**, is a kind of cake formed by boiling the gelatinous parts of animal substances till the watery parts are evaporated. This species of soup is chiefly used at sea, and has been found of great advantage. The following is a receipt to prepare it: of calves feet take four; leg of beef twelve pounds; knuckle of veal three pounds; and leg of mutton ten pounds. These are to be boiled in a sufficient quantity of water, and the scum taken off as usual; after which the soup is to be separated from the meat by straining and pressure. The meat is then to be boiled a second time in other water; and the two decoctions, being added together, must be left to cool, in order that the fat may be exactly separated. The soup must then be clarified with five or six whites of eggs, and a sufficient quantity of common salt added. The liquor is then strained through flannel, and evaporated on the water-bath to the consistence of a very thick paste; after which it is spread rather thin upon a smooth stone, and cut into cakes, and lastly dried in a stove until it becomes

rittle ; these cakes are kept in well closed bottles. The same process may be used to make a portable soup of the flesh of poultry ; and aromatic herbs may be used as a seasoning if thought proper. These tablets or cakes may be kept four or five years. When intended to be used, the quantity of half an ounce is put into a large glass of boiling water, which is to be covered, and set upon hot ashes for a quarter of an hour, or until the whole is entirely dissolved. It forms an excellent soup, and requires no addition but a small quantity of salt.

**SOUR**, *adj.*, *n. s., v. a.*, *Sax.* *sun*, *sunig*; *SOURISH*, *adj.* [ & *v. n.*] *Dan.* *suar*; *Goth.* *SOURLY*, *adv.* *Swed.* and *Welsh.* *SOURNESS*, *n. s.* *sur.* Acid; austere; *SOUR-SOP*. pungent with astringency : hence harsh; crabbed; severe of temper; afflictive; painful; sullen; discontented : to sour is, to make or become acid, harsh, or crabbed : the noun substantive means an acid substance : sourish is slightly sour: the adverb and noun substantive following correspond : soursop is a custard apple.

Their drink is *sour*. *Hom. iv. 18.*

A thousand *sours* to temper with one sweet,  
To make it seem more dear and dainty. *Spenser.*

Pelagius carp'd at the curious neatness of men's apparel in those days, and, through the *sourness* of his dispositio:, spoke somewhat too hardly thereof. *Hooker.*

He was a scholar,

Lofty and *sour* to them that loved him not.

*Shakespeare. Henry VIII.*

Hail, great king!

To *sour* your happiness, I must report  
The queen is dead. *Id. Cymbeline.*

Not my own *sister* peace

Hath ever made me *sour* my patient cheek,  
Or bend one wrinkle on my sovereign's face.

*Shakespeare.*

All *sour* things, as vinegar, provoke appetite.

*Bacon.*

*Sourness* consisteth in some grossness of the body ; and incorporation doth make the mixture of the body more equal, which induceth a milder taste.

*Id. Natural History.*

A man of pleasant and popular conversation, rather free than *sour* and reserved.

*Wotton's Life of Buckingham.*

He was never thought to be of that superstitious *sourness*, which some men pretend to in religion.

*King Charles.*

His angelick nature had none of that carnal leaven which fermenteth the *souring* of ours.

*Decay of Piety.*

I' th' spring, like youth, it yields an acid taste ;  
But summer doth, like age, the *sourness* waste.

*Drexham.*

Tiberius, otherwise a very *sour* man, would punctually perform this rite unto others, and expect the same. *Brown.*

By distillation we obtain a *sourish* spirit, which will dissolve coral. *Boyle.*

But let the bounds of licences be fixed,  
Not things of disagreeing natures mixed,  
Not sweet with *sour*, nor birds with serpents joined.

*Dryden.*

Thus kneaded up with milk, the new made man  
His kingdom o'er his kindred world began ;  
Till knowledge misapplied, misunderstood,  
And pride of empire, soured his balmy blood. *Id.*

The stern Athenian prince  
Then *sourly* smiled. *Id. Knight's Tale.*

He knew

For fruit the grafted pear-tree to dispose,  
And tame to plumbs the *sourness* of the sloes.

*Id. Virgil.*

Tufts of grass *sour* land. *Mortimer's Husbandry.*  
He said a *sour* thing to Laura the other day.

*Tatler.*

If I turn my eyes from them, or seem displeased,  
They *sour* upon it. *Spectator.*

Her religion is equally free from the weakness of superstition and the *sourness* of enthusiasm: it is not of an uncomfortable melancholy nature.

*Addison's Freeholder.*

Take care that no *sourness* and moroseness mingle with our serious frame of mind. *Nelson.*

Asses' milk, when it *sours* in the stomach, and whey turned *sour*, will purge strongly.

*Arbuthnot on Diet.*

Of acid or *sour* one has a notion from taste, *sourness* being one of those simple ideas which one cannot describe.

*Arbuthnot.*

Sullen and *sour*, with discontented mien !

*Pope.*

Jocasta frowned. *Id.*

Has life no *sourness*, drawn so near its end *Id.*

The lord treasurer often looked on me with a *sour* countenance.

*Swift.*

One passion, with a different turn,

Makes wit inflame, or anger burn.

So the sun's heat, with different powers,

Ripens the grape, the liquor *sours*. *Id.*

It [the *sour sop*] grows in several parts of the Spanish West-Indies, where it is cultivated for its fruits.

*Miller.*

Both ways deceitful is the wine of power ;

When new 'tis heady, and when old 'tis *sour*.

*Harte.*

**SOUR**, in chemistry, &c. See ACID, ACIDITY, ACIDS, and CHEMISTRY, Index.

**SOURABHAYA**, a settlement on the north-eastern coast of Java, the capital of a Dutch establishment. The place is situated in lat. 7° 11' S., on the banks of a river one mile and a half from the sea shore. It is navigable up to the town for vessels of 100 tons burthen, and one side of the bank is made convenient for tracking. The environs and banks of the river contain many villages, inhabited by two-thirds Javanese and Malays, and the remainder Chinese. The country around Sourabhaya is very fertile, and shaded by thickets of bamboos, bananas, and other shrubs. The land is flat, and the soil so light that it can be ploughed with a single bullock; and there is here a breed of horses, which, though small, are strong and handsome. The Dutch garrison is quartered in a brick fort, containing a small arsenal on the right bank of the river, on which side dwell the governor and most of the officers. This place is the depot for the quotas of troops which the chiefs of Madura and Samanap are obliged to furnish to the Dutch East Company. Here are several building yards for vessels not drawing more than ten or twelve feet water, which are afterwards sold to the petty princes on Borneo and Bally, and for transporting the rice raised in the neighbourhood. The mountains in the vicinity contain a hard stone, in color and veins resembling box-wood, which is worked with a wheel by the natives very tastefully into candlesticks, plates, and goblets. They also manufacture many other

little articles, such as combs and brushes of buffaloe's horns. A league and a half distant from Sourabhaya, upon a hill that extends along the river Bagieran, is a saltpetre house, the nitre being procured from the earth, much intermixed with the dung of bats, which are very numerous in the neighbourhood. Ships from Batavia going to China, or the Philippines, generally touch for refreshments at this place, especially during the season of the north wester. The adjacent country is remarkably populous, and the natives are governed by two Tomogons, one of whom is allied to the emperor of Java. Within a circumference of twelve miles, the Javanese and Malay villages are so numerous that they seem a part of the town.

SOURCE, n.s. French source; Ital. *sorgo*. Spring; fountain; head; original; first cause or producer.

This second source of men, while yet but few,  
With some regard to what is just and right  
Shall lead their lives. *Milton's Paradise Lost.*

Famous Greece,  
That source of art and cultivated thought,  
Which they to Rome, and Romans hither, brought.  
*Waller.*

Of himself is none;  
But that eternal Infinite, and One,  
Who never did begin, who ne'er can end,  
On him all beings, as their source, depend.  
*Dryden.*

This is the true source and original of this mischief. *South.*

Kings that rule  
Behind the hidden sources of the Nile. *Addison's Cato.*

The heads and sources of rivers flow upon a descent, or an inclining plane, without which they could not flow at all. *Woodward's Natural History.*

SOURING LIME, in rural economy. It is stated by the writer of an Essay on Quicklime as a Cement, that, when lime is to be employed for making plaster, it is of great importance that every particle of the limestone be slaked before it is worked up; for, as the smoothness of the surface is the circumstance most wished for in plaster, if any particles of lime should be beaten up in it, and employed in work, before they have had sufficient time to fall, the water, still continuing to act upon them after the materials have been worked up, will infallibly slake such particles, which will then expand themselves in a forcible manner, and be productive of those excrescences upon the surface of the plaster which are commonly known by the name of blisters. Consequently, if it be intended to have a perfect kind of plaster, which is capable of remaining smooth on the surface and free from blisters, there is an absolute necessity for allowing the lime of which it is composed to lie for a considerable length of time in maceration with water before it is wrought up into plaster, which is a process or operation that is here termed souring. Where the limestone is of a pure quality, and has been very perfectly calcined or burnt, there will seldom be any danger of the whole of the lime falling at first; but, where it has been less perfectly burnt, there will be many particles, which will require to lie a long time before they will be completely reduced into powder. This

macerating process or operation is consequently more necessary with impure than pure lime; but still it ought on no occasion to be omitted or neglected, as there is not the smallest probability but that some blisters would appear on the surface of plasters made with even the purest lime, when worked up and applied immediately after being slaked, without undergoing this souring process in some degree. The practice is also common of souring the lime when it is intended for being used in mortar.

It is not necessary that plaster should be endowed with stony hardness; so that there is no loss sustained by allowing a great proportion of the lime which is designed for that purpose to absorb its air before it be used; and the only circumstance which is necessary to be attended to in souring the lime is, that it be allowed to macerate long enough. It is indeed necessary on some occasions it should lie a very long time before any certainty can be had that all the particles are thoroughly slaked, as pieces of lime-shells have been known to lie upwards of six months exposed to all the changes of the winter weather, and fall after that period. Another advantage of some consequence likewise, it is said, attends this practice; as, if by such means a large proportion of the lime be allowed to absorb its air, and become in the mild or effete state, when it is wrought or beaten up for use, the water can have no sensible effect upon this mild lime. By this means, too, those crystalline exudations, which are so common on walls newly plastered, will be the best and most effectually prevented.

As lime, from the moment of its being fully slaked, begins to absorb air, and continues to take up more and more every minute from that time until it becomes perfectly mild or effete, so as to be rendered gradually less and less proper for forming mortar of any kind, it necessarily follows that, where lime designed for this purpose is permitted to lie long in the sour, a great part of it will be converted into chalky matter, or uncry stallised mild or effete lime, in which state it will not be capable of having so much sand added to it, or of forming so good a mortar as would have been the case if a larger proportion of the sandy material had been made use of in the first place, and been wrought up as speedily as possible, without so much souring, into mortar, and immediately made use of. The evil will also be increased where the lime has been but slightly burnt.

The doctrine of the nature and utility of this process receives additional proof and support from the practice which was followed by the ancients, who, according to Vitruvius and Pliny, recommend that the lime should be macerated or soured in water, for exactly the same reasons that we have given, as it is only by that means, he asserts, that the plaster can be prevented from blistering. 'Tunc de albaris operibus est explicandum. Id autem erit recte, si glebae calcis optime, ante multo tempore quam opus fuerit, macerabuntur. Numque cum non penitus mace rata, sed recens sumitur—habens latentes crudos cugulos, pustulas omittit.—Qui calculi dissolvunt et dissipant tectorii politiones.'—Vitruvius, lib. vii. c. 2.

‘Ruinarum urbis,’ says Pliny, ‘ea maxime causa, quod furto, calcis sine ferrumine suo casea menta componuntur. Intrita quoque quo vetus sit, eo melior. In antiquarum (antiquis) sedumligibus invenitur, ne recentiore trima ute- retur redemptor; idio nulla (nullæ) tectoria eorum rimæ fædavere.’—Hist. lib. xxxvi. c. 23.

**SOUSE**, *n. s. & v. a.* Belg. *soute*, salt; or rather Fr. *sauce*; Ital. *salsa*. Pickle of salt; any thing kept parboiled in salt pickle: and, in a ludicrous sense, to plunge ‘head over ears’ into water.

And he that can rear up a pig in his house,  
Hath cheaper his bacon, and sweeter his *souse*.  
                                *Tusser.*

They *soused* me into the Thames with as little re-  
morse as they drown blind puppies. *Shakspeare.*

Who those were that run away,

And yet gave out th' had won the day;

Although the rabble *soused* them for't

O'er head and ears in mud and dirt. *Butler.*

They *soused* me over head and ears in water when  
a boy, so that I am now one of the most case-hardened  
of the Ironsides. *Addison's Guardian.*

Oil, though it stink, they drop by drop impart;  
But *souse* the cabbage with a bounteous heart. *Pope.*

**SOUSE**, *v. n. & adv.* Of this word I know  
not the original: it must come from Fr. *sous*, or  
*dessous*, down.—Johnson. But see Soss, which  
seems synonymous. To fall as a bird on its  
prey: with sudden violence.

The gallant monarch is in arms;  
And like an eagle o'er his airy tow'rs,  
To *souse* annoyance that comes near his nest. *Shakspeare.*

Thus, on some silver swan, or timorous hare,  
Jove's bird comes *sousing* down from upper air;  
Her crooked talons truss the fearful prey,  
Then out of sight she soars. *Dryden's Æneid.*

Jove's bird will *souse* upon the tim'rous hare,  
And tender kids with his sharp talons tear. *Dryden.*

Such make a private study of the street,  
And, looking full at every man they meet,  
Run *souse* against his chaps, who stands amazed,  
To find they did not see, but only gazed. *Young.*

**SOU-TCHÉOU**, a city of China, of the first rank, in Kiang-nan, on a river that falls into the lake Tai. It is one of the most beautiful cities in the whole empire. From the delightfulness of its situation, mildness of the air, temperature of the climate, fertility of the soil, plenty and cheapness of provisions, and the gentle manners of the people, it is styled the paradise of China. It has a great trade, particularly in embroideries and brocades, which are in demand through the whole empire; and it is much frequented by strangers. Its jurisdiction comprehends one town of the second class, and seven of the third. It is 562 miles S. S. E. of Peking.

**SOUTERRAIN'**, *n. s.* Fr. *souterrain*. A grotto or cavern in the ground.

Defences against extremities of heat, as shade, grottos, or *souterrains*, are necessary preservatives of health. *Arbuthnot.*

' **SOUTH** (Dr. Robert), an eminent divine, the son of Mr. William South, merchant of London, born at Hackney in 1633. He studied at Westminster school, and afterwards in Christ Church College, Oxford. In 1654 he wrote a copy of Latin

verses to congratulate Cromwell upon the peace concluded with the Dutch; and in 1655 a Latin poem entitled *Musica Incantans*. In 1660 he was elected public orato of the university; and in 1661 became domestic chaplain to Edward earl of Clarendon, lord high chancellor of England. In 1663 he was installed prebendary of Westminster, admitted D. D., and had a sinecure bestowed on him in Wales by the earl of Clarendon; after whose retirement into France in 1667 he became chaplain to the duke of York. In 1670 he was installed canon of Christ Church, in Oxford; and in 1676 attended as chaplain to Laurence Hyde, esq., ambassador extraordinary to the king of Poland. In 1678 he was presented to the rectory of Islip in Oxfordshire; and in 1680 rebuilt the chancel of that church, as he afterwards did the rectory house belonging to it. After the revolution he took the oath of allegiance to William and Mary. He died in 1716, and was interred at Westminster Abbey, where is his monument. He published, 1. *Animadversions* on Dr. Sherlock's *Vindication of the Holy and Ever Blessed Trinity*. 2. *A Defence of his Animadversions*. 3. *Sermons*, 8 vols. 8vo. And after his decease were published his *Opera Posthuma Latina*, and his posthumous English works. Dr. South was remarkable for his wit, which abounds in all his writings, and even in his sermons; but they equally abound in ill-humor, spleen, and satire. He was a remarkable time-server. During the life of Cromwell he was a staunch Presbyterian, and then railed against the Independents; at the restoration he exerted his pulpit eloquence against the Presbyterians: and in the reign of queen Anne was a warm advocate for Sacheverel.

<b>SOUTH</b> , <i>n. s. adj. &amp; adv.</i> <b>SOUTHEAST'</b> , <i>n. s. &amp; adj.</i> <b>SOUTH'ERLY</b> , <i>adv.</i> <b>SOUTH'ERN</b> , <i>adj.</i> <b>SOUTH'ING</b> , <i>adj. &amp; n. s.</i> <b>SOUTH'MOST</b> , <i>adj.</i> <b>SOUTH'WARD</b> , <i>adv. &amp; n. s.</i> <b>SOUTHWEST'</b> , <i>n. s.</i>	Sax. <i>rūð</i> ; Fr. Swed. and Goth. <i>sud</i> . The part where the sun is to us at noon: opposed to north; the southern regions; south wind: as an adjective, southern; meridional: as an adverb, toward the south: southeast is a point between the south and east: southerly and southern, belonging to or lying toward the south: southing, going toward the south; tendency to the south: southmost, farthest to the south: southward is, toward the south; the southern regions: southwest, the point between the south and west.
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The queen of the south. *Bible.*  
How thy garments are warm, when he quieteth the earth by the south wind. *Job xxvii. 17.*

Phenice is an haven of Crete, and lieth towards the southwest. *Acts xxvii. 12.*

All the contagion of the south light on you,  
You shames of Rome you! *Shakspeare. Coriolanus.*

His regiment lies half a mile  
South from the mighty power of the king. *Id. Richard III.*

I am but mad north, northwest; when the wind is wutherly, I know a hawk from a handsaw. *Id. Hamlet.*

Why mourn I not for thee,  
And with the southern clouds contend in tears? *Id. Henry V.*

Countries are more fruitful to the *southward* than in the northern parts.

*Raleigh's History of the World.*

East and west have no certain points of heaven, but north and *south* are fixed; and seldom the far southern people have invaded the northern, but contrariwise.

*Bacon.*

The planting of trees warm upon a wall, against the *south* or *southeast* sun, doth hasten their ripening.

*Id.*

Men's bodies are heavier when *southern* winds blow than when northern. *Id. Natural History.*

From the north to call

Decrepid winter, from the *south* to bring

Solstitial summer's heat. *Milton.*

Mean while the *south* wind rose, and, with black wings

Wide hovering, all the clouds together drove. *Id.*

Next Chemos, the obscene dread of Moab's sons, From Aroar to Nebo, and the wild

Of southmost Abarim. *Id.*

Two other country bills give us a view of the most easterly, westerly, and southerly parts of England.

*Graunt.*

Unto such as live under the pole that is only north which is above them, that is only southerly which is below them. *Browne.*

Frowning Auster seeks the *southern* sphere, Androts with endless rain the' unwholesome year. *Dryden.*

I will conduct thee on thy way, When next the *southing* sun inflames the day. *Id.*

Not far from hence, if I observed aright The *southing* of the stars and polar light, Sicilia lies. *Id. Aeneid.*

A prisoner in a room twenty foot square is at liberty to walk twenty foot *southward*, but not northward. *Locke.*

The three seas of Italy, the Inferior towards the *southeast*, the Ionian towards the *south*, and the Adriatic on the northeast side, were commanded by three different nations. *Arbuthnot.*

Every life from the dreary months Flies conscious *southward*. *Thomson's Winter.*

He spurned the wretch that slighted or withheld The tender argument of kindred blood, Nor would endure that any should control His freeborn brethren of the *southern* pole. *Cowper.*

**SOUTH OF INDIA.**—This has sometimes been treated as a distinct geographical division of Hindostan, having the figure of a triangle, of which the course of the river Krishna forms the base, and the coasts of Malabar and Coromandel the sides. Its extent from the Krishna to Cape Comorin, which forms the apex of the triangle, is about 600 British miles, and its breadth in the widest part is about 550, whence it tapers to a point at Cape Comorin. The great feature of this region is a central table land, elevated from 3000 to 5000 feet above the level of the sea, separated by wild, abrupt, declivities from the low flat countries to the east and west, which form a belt of small but unequal breadth between the hills and sea. The central range is usually termed Balaghaunt (above the ghauts), and the lower belt the Payeenghaunt (below the ghauts). The mass of the population consists of Hindoos; and the primitive Hindoo manners and customs are preserved in a state of great purity, particularly in Tinnevelly and the adjacent districts. The lapse of twenty centuries has here apparently made no change in the habits and peculiarities

of the Hindoo, either as to his civil condition or religion. His diet is frugal and simple; his hut formed of mud, the leaves of the cocoa-nut tree, and a few bamboos; and a small strip of cloth is his garment. The country is subdivided chiefly into villages, comprehending some thousand acres of arable and waste land, the boundaries of which have scarcely ever been altered. The constitution of these villages resembles a permanent republic, or corporation, having its hereditary municipal officers, and some artizans.

Hyder was the only Indian sovereign who ever subdued his petty feudatories, and really was, according to our ideas, master of his country. Since the intrusion of the Mahometans the South of India has much deteriorated, and its decline was accelerated at the commencement of the British influence, while the revenue was gathered by its feudatory chiefs. The open violence of armies has probably done less injury than the fines, fees, exactions, and contributions, which have been imposed by the tyranny, or permitted by the weakness, of these governments. The buildings, tanks, channels, and even ridges, that separated former fields; the ruined villages, general tradition, books, accounts, sunnuds, and inscriptions, all combine to give a high idea of much greater former cultivation and opulence. Except Madras there are not now any great cities in this division of Hindostan. The earliest Mahometan army that crossed the Krishna was led in 1310 by Kafoor against Dhoor Summoeder, the capital city of Belal Deo, the sovereign of Karnata. Other systems of religion, beside that of Brahma, had at certain periods an extensive sway here. 1. The Jains, who reject the authority of the Vedas and Purans, of which profession the sovereigns of Karnata appear to have been until the twelfth century of the Christian era. 2. The Bhauddha, who had temples. 3. The Mahometan religion, which was introduced through the medium of the commercial intercourse between Arabia and Malabar. 4. A numerous colony of Jews, settled at Cochin and in other parts of Malabar. 5. A knowledge of the true religion had made some progress at an early period, but the Nestorian doctrines were those professed.

The territories comprehended in this division, according to Mr. Hamilton, are a small portion of the Bejapoore province; the Balaghaut ceded districts; the Carnatic, northern, central, and southern; Mysore, Canara, Malabar, Barramahal, Coimbatore, Dindigul, Salem and Kistnagherry, Cochin and Travancor; under which heads respectively further topographical details will be found.

**SOUTH SEA, or PACIFIC OCEAN,** are both names of that vast body of water interposed between Asia and America. It does not however, strictly speaking, reach quite to the continent of Asia, excepting to the northward of the peninsula of Malacca: for the sea interposed between the eastern coast of Africa and the peninsula just mentioned has the name of the Indian Ocean. The South Sea then is bounded on one side by the western coast of America, through its whole extent, from the unknown regions in the north to the Straits of Magellan and Terra del Fuego,

## S O U T H A M P T O N.

where it communicates with the southern part of the Atlantic. On the other side it is bounded by the coast of Asia, from the northern promontory of Tschusktoskoi Noss, to the peninsula of Malacca already mentioned. Thence it is bounded to the southward by the coasts of Borneo, Celebes, Macassar, New Guinea, New Holland, and the other islands in that quarter, which divide it from the Indian Ocean. Then, washing the east coast of the great island of New Holland, it communicates with that vast body of water encompassing the whole southern part of the globe, and which has the general name of the Southern Ocean. Thus does this vast ocean occupy almost the semi-circumference of the globe, extending almost from one pole to the other, and about the equatorial parts extending almost 180° in long., or 12,500 English miles. The northern parts of the Pacific are almost destitute of land, from lat. 40° N. and upwards, excepting such islands as are near the coast either of Asia or America: in the southern part there are a great number. Till very lately the South Sea was in a great measure unknown. From the great extent of ice which covers the southern part of the globe, it was imagined that much more land existed there than in the northern regions. But the supposed southern continent, or Terra Australis, has hitherto eluded the search of the most expert navigators. See COOK, PACIFIC, and POLYNESIA.

SOUTHAM, a market town and parish of Warwickshire, thirteen miles north-west from Banbury, and eighty-two north from London, is indifferently built. But the church is handsome, and has a spire. Market on Monday, for cattle. Fairs, first Monday in Lent, Easter-Monday, Monday before Whitsuntide, and July 10th.

SOUTHAMPTON is a borough-town and county of itself, consisting of seven parishes, including Stoneham, situate at the junction of the Test and Itching, which forms the Southampton Water, twenty-two miles W. N. W. from Portsmouth, and seventy-seven W. N. W. from London. It contains many handsome streets; and its ancient timber buildings are daily giving place to modern erections. The High Street, terminating at the quay, has a beautiful view both of the Water and the New Forest. The town is well paved, lighted, and watched; and the streets are always clean and dry. Conduits are disposed at proper distances, and supply the town with excellent water. The new and superior buildings are chiefly occupied as lodging-houses for the numerous summer visitors, for the purpose of sea-bathing; for whose accommodation here, and in the vicinity, are a vast number of warm and cold baths, fitted up with suitable conveniences. The approach to the town from the London road is exceedingly striking; and, on entering the town by one of its more fashionable streets, the view is farther heightened by that venerable relic of antiquity the Bar-gate; the greater part of which is supposed to have been erected in the reign of Edward III. Over the arches of the foot and carriage-ways is a town-hall, fifty-two feet by twenty-one, with which a room for the grand jury communicates.

The old walls present, in some places, a venerable appearance. Their circuit is computed at

one mile and a quarter, but the whole present town cannot be less than three miles round. The castle stands near the middle of the south part. The keep stood on a high artificial mount, and from its ruins a small round tower has been constructed, whence there is a delightful prospect. It is supposed to have been of Saxon origin. The six parishes (exclusive of Stoneham) have but five parish churches; viz. Holy-Rood, St. Michael's, All-Saints, St. Mary's, and the united parish church of St. Lawrence and St. John. That of Holy-Rood is remarkable for its organ and monuments. It is a vicarage, in the patronage of Queen's College, Oxford. St. Michael's has a high slender octagonal tower, which serves as a mark for vessels entering the harbour. All-Saints' is an elegant modern structure, fronting the High Street. The whole length is ninety-five feet, breadth sixty-one, and height, to the ceiling, forty-seven. St. Lawrence's is a small church, situate in the High Street. St. Mary's is a rectory, in the gift of the bishop of Winchester, worth at least £1400 per annum. The various classes of dissenters have six meeting-houses in this town. Near the town is an asylum for soldiers' orphans, on the plan of the asylum at Chelsea. A grammar-school, founded here in the reign of Edward VI., is in high repute. Among the principal charities are Thorner's alms-houses, for the relief of poor widows; and a charity-school, founded by Alderman Taunton, for educating and apprenticing poor boys, besides several of less consequence. At the bottom of Orchard Street, without the Bar-gate, is a spring of the nature of Tunbridge-Wells, used with effect for the same complaints.

The public rooms near the baths command a delightful prospect; the ball-room is spacious and handsomely decorated; the theatre capacious and commodious, and besides these, there are horse-races and other entertainments. The town has several well-furnished libraries, and three respectable banks. About half a mile from the Bar-gate stands the barrack, enclosing an area of two acres. On an eminence, at a small distance, is the polygon, an elegant pile of buildings, commanding extensive sea and land views. The inhabitants carry on a considerable trade with the northern parts of Europe, for timber, hemp, tallow, &c.; with Portugal for wine and fruit; and with Wales and Newcastle for iron, coals, lead, and glass. Southampton has likewise a good trade with Jersey and Guernsey, to which they send large quantities of wool, principally returned in knit hose. Ship building is carried on at the docks near the town.

According to its last charter of incorporation, granted by Charles I., Southampton is governed by a mayor, a recorder, nine justices, a sheriff, two bailiffs, twenty-four common councilmen, and as many burgesses. All who have passed the chair are aldermen. The town which was made a borough by Henry II., is as such independent of the lord lieutenant and sheriff of Hampshire. The mayor is admiral of the liberties from Southsea castle to Hurst castle, and halfsea over from Calshot to the Isle of Wight. Southampton sends two members to parliament. The first return was made in the 23d of Edward I. The

number of voters is about 700, consisting of the burgesses, and such of the inhabitants as pay scot and lot. Several royal burgesses have been enrolled in this corporation, among whom are the late king and his present majesty. The origin and name of Southampton have occasioned much discussion. The name is written Hanton or Hantune in the Doomsday book, and is supposed to be derived from the river Ant or Anton. The Romans had a settlement at Bittern, about a mile and a half from Southampton, named Clausenham. The present town arose after that was abandoned. Hampton must have been a place of consequence under the Anglo-Saxons, as it gave name to the whole county. From the year 873 until the accession of Canute it was subject to frequent ravages by the Danes. This monarch appears to have occasionally resided at Southampton; and it was here that the incident happened which is recorded of him, when he ordered his chair to be set on the sea shore, and attempted to control the waves. During the thirteenth century a good trade was carried on between this port and France. In 1345 the army which afterwards fought at the battle of Cressy was embarked here, as was also the army which, in 1415, fought at Agincourt. The trade of the town appears again to have flourished in the reign of Henry VI., and Camden, who wrote in the reign of Elizabeth, says that in his time the town was famous for the number and beauty of its buildings, and the resort of numerous merchants. After this, however, it appears to have declined, as Gibson, in 1695, describes it as going fast to decay. Since that time, however, the trade and consequence of the town have again revived. In 1811 the town contained 1669 houses, and 9617 inhabitants. Markets on Tuesday, Thursday, and Saturday, well supplied with excellent fish and other provisions. There are two annual fairs, the principal of which is Trinity. Twelve miles S. S. W. of Winchester, and seventy-five W. S. W. of London. Long.  $1^{\circ} 24' W.$ , lat.  $50^{\circ} 54' N.$ .

SOUTHAMPTON, a township of the United States, in Rockingham county, New Hampshire.—2. A township of Hampshire county, Massachusetts, which contains a lead mine. Ninety-eight miles west of Boston.—3. A post township of Suffolk county, New York, on the south side of Long Island. 100 miles east of New York.—4. A township of Cumberland county, Pennsylvania.—5. A township of Franklin county, Pennsylvania.—6. A township of Bedford county, Pennsylvania. Population 932.—7. A township of Somerset county, Pennsylvania.—8. A township of Bucks county, Pennsylvania.—9. A county of the United States, in the south-east part of Virginia, bounded north-west by Sussex and Surry counties, east by Isle of Wight and Nansemond counties, south by North Carolina, and south-west by Greensville county. Jerusalem is the chief town.

SOUTHCOTT (Joanna), a remarkable fanatic of recent times, who attracted by her pretensions numerous converts in London and its vicinity. They are said to have amounted at one period to upwards of 100,000. She was born in the west of England, about 1750, of very humble parents,

and, being carried away by the fervor of a heated imagination, gave herself out as the woman spoken of in the book of Revelations. In this capacity, although altogether illiterate, she scribbled much mystic nonsense in the way of vision and prophecy, and for a while carried on a lucrative trade in the sale of seals, which were, under certain conditions, to secure salvation. A disorder of rather rare occurrence finally giving her the outward appearance of pregnancy, after she had passed her grand climacteric, she announced herself as the mother of a promised Shiloh, whose speedy advent she confidently predicted. More than one clergyman of the established church was numbered among her votaries. A cradle of expensive materials, and highly decorated, was prepared at a fashionable upholsterer's, for the expected babe. So fully persuaded were many of her attendants of the reality of her mission, that one of the ecclesiastics already alluded to, on receiving a remonstrance from his diocesan, offered to bind himself to resign a benefice he possessed into the bishop's hands, if the holy Joanna, as he styled her, should fail to appear on a specified day with the expected Shiloh. As a specimen of the extravagant delusion which may be popular in the neighbourhood of the most enlightened metropolis of the world, we subjoin a specimen or two of her reveries. 'I have this to inform the public,' says the holy woman in her Warning to the whole World, p. 123, 'that the prophecies of this book show the destruction of Satan, and the coming of Christ's kingdom. . . . . Here my readers may ask me, what ground I have to affirm this belief? I answer, from the truth that is past I have ground to believe that other truths will follow. From the former I judge the latter. The war that I foretold in 1792 we should be engaged in followed in 1793. The dearth, which came upon the land in 1794 and 1795, I foretold in 1792; and, if unbelief did abound, that a much greater scarcity would take place, and which too fatally followed. I foretold the bad harvest in 1797. I foretold, in letters sent to two ministers of Exeter, what would be the harvests of 1799 and 1800; that the former would be hurt by rain, and the latter by sun:—these followed as predicted. The rebellion which took place in Ireland, in 1798, I foretold in 1795, when the Irish soldiers rebelled in Exeter against the English officers. . . . . I foretold the secret thoughts and conversation of people in Exeter, which took place in 1792.' 'The letter I sent to the Rev. Archdeacon Moore last spring foretold the harvest as it came. *I was ordered to put it in my own hand writing, to prevent his reading it before the time was expired!* You may marvel how a woman that professed to say she is called of God, to write such deep prophecies, and have the mysteries of the Bible explained to her, should write such a hand as no one can read. But this must be to fulfil the Bible. Every vision John saw in heaven must take place upon earth; and here is the sealed book that no one can read.' 'The following is a communication given to Joanna in 1794 concerning the vials in the Revelation, and taken from the sealed writings opened January 12th, 1803.'

'No man by learning can these truths find out:  
It is of God, I say, let no man doubt!  
Thy pen's put down, and thou no more canst say,  
Till I shall further on direct thy way.  
And now thy way I surely will direct.  
'Tis on the sun the vial is pour'd out;  
And fervent heat it shall so strongly burn,  
That all the earth shall feel it and shall mourn;  
Because the sun shall burn so very strong,  
That all the corn it surely will consume.'

Great peace in England after that shall be,  
Because the remnant will believe in me.'

In p. 37, we find the following prophecy,

'I write to you, Sir, as a friend, to judge for yourself. If unbelief do still abound, the next harvest will be worse than the last, and your repentance may come too late. I am ready to answer for myself in all I have said or done. I have written no cunningly devised fable to any man, but written to make known unto all men the second coming of the Lord Jesus Christ; and am, with the greatest respect, your humble servant,

JOANNA SOUTHCOTT.

'Now, I must beg my readers to observe,' says the prophetess, 'this letter was written the 2d of March, in the year 1800; and the harvest that followed was worse, as foretold, than the former of 1799.'—With regard to her last and most extraordinary attempt at delusion, more than one medical man who examined her, attested her pregnancy; and a numerous body of partizans were the dupes of her imposture to the moment of her death. Dr. Reece gives the following account of a visit, at which he was present a few weeks before she died. Five or six of her friends, who were waiting in the next room, were admitted into her bed-chamber.—'She desired them,' says our author, 'to be seated round her bed; when spending a few minutes in adjusting the bed clothes with seeming attention, and placing before her a white handkerchief, she thus addressed them, as nearly as I can recollect, in the following words.—'My friends, some of you have known me nearly twenty-five years, and all of you not less than twenty. When you have heard me speak of prophecies, you have sometimes heard me say that I doubted my inspiration. But at the same time you would never let me despair. When I have been alone it has often appeared delusion; but, when the communication was made to me, I did not in the least doubt. Feeling, as I now do feel, that my dissolution is drawing near, and that a day or two may terminate my life, it all appears delusion.'—She was by this exertion quite exhausted, and wept bitterly. On reviving, in a little time, she observed that it was very extraordinary, that after spending all her life in investigating the Bible, it should please the Lord to inflict that heavy burden on her. She concluded this discourse, by requesting that every thing on this occasion might be conducted with decency. She then wept; and all her followers present seemed deeply affected, and some of them shed tears. 'Mother,' said one (I believe Mr. Howe), 'we will commit your instructions to paper; and rest assured they shall be conscientiously followed.' They were accordingly written down with

much solemnity, and signed by herself, with her hand placed on the Bible in the bed . . . This being finished, Mr. Howe again observed to her, 'Mother, your feelings are human. We know that you are a favored woman of God, and that you will produce the promised child; and whatever you may say to the contrary will not diminish our faith.' This assurance revived her, and the scene of crying was changed with her to laughter. She died 27th of December 1814; four days after which event her body was inspected, but no child was found. The faith of her disciples, however, was not extinguished by her death. The dead body was kept warm for four days, according, as was said, to her own directions, in hopes of a revival, and the birth of the promised child; and it was not consigned to the dissector, till putrefaction had rendered it extremely offensive. Hopes are even yet, we understand, cherished, that, although she has been withdrawn for a season, she will one day return with her son, and fulfil the promises, whose accomplishment has been delayed on account of the wickedness of the world. In fact, as some of her disciples, and particularly Mr. Sharp, have suggested, that she is the woman described at the beginning of the twelfth chapter of the Revelation; it is evident from the perusal of that chapter, that both the mother and the child were to disappear from the earth, but to return at the end of a period not easy to be defined. Mr. Sharp publicly asserted his conviction that she was only gone to heaven for a season, in order to legitimate the embryo child.' In this persuasion he, as well as many others, lived and died, nor is the sect yet extinct; on the contrary, within a short period several families of her disciples were living together in the neighbourhood of Chatham remarkable for the patriarchal length of their beards and the general singularity of their appearance. After the body of Joanna had been submitted to anatomical investigation (when the extraordinary appearance of her shape was fully accounted for upon medical principles), her remains were conveyed for interment under a fictitious name to the burying ground attached to the chapel in St. John's Wood. A stone has been erected to her memory, which, after reciting her age, and other usual particulars, concludes with some lines, evidently the composition of a still unshaken believer.

SOUTHEND, a hamlet, risen of late into great repute as a watering-place, in the parish of Prittlewell (with which the population is returned), hundred of Rochford, Essex, at the mouth of the Thames, opposite to Sheerness, three miles and a half east from Leigh, and forty-two from London, is pleasantly situate on the slope of a hill. The air is esteemed very salubrious, and the water, notwithstanding its mixture with the Thames, is clear and salt. The terrace is a row of houses handsomely finished with pilasters and cornices of stone, and, being on an eminence, has a noble prospect of the Nore, Medway, Sheerness, and the sea. The assembly-room is fitted up in a handsome style, and the theatre is neat: the library, situate on the brow of the hill, between the Old and New Town, is an elegant Gothic building. The accommodations are respectable.

**SOUTHERN** (Thomas), an eminent dramatic writer, born at Dublin in 1660, and educated in the university there. He came young to London to study law, but devoted himself to poetry and the drama. His Persian Prince, or Loyal Brother, was introduced in 1682, when the Tory interest was triumphant in England; and the character of the loyal brother being intended to compliment James duke of York, he rewarded the author, when he came to the throne, with a commission in the army. On the revolution he retired to his studies, and wrote several plays, from which he derived a very handsome subsistence, being the first who raised the profits of play-writing to a second and third night. The most finished of all his plays is Oroonoko, or the Royal slave, which is built on a true story, related in one of Mrs. Behn's novels. He died in 1746, aged eighty-six. The latter part of his days he spent in a peaceful serenity, having, by his commission as a soldier, and the profits of his dramatic works, acquired a handsome fortune; and, being an exact economist, he improved what he had gained to the best advantage. He enjoyed the longest life of all our poets; and died one of the richest of them. His plays are printed in 2 vols. 12mo.

**SOUTHERNWOOD**, *n. s.* Sax. *ruðeñnpudu*. Abrotnanum.

This plant agrees in most parts with the wormwood, from which it is not easy to separate it.

*Miller.*

**SOUTHGATE** (Rev. Richard), F. S. A., a late eminent English antiquary. Having gone through the usual course of study, and taken orders, he was appointed rector of Warsop in Nottinghamshire and curate of St. Giles's in the Fields. He was an active parish priest, and was indefatigable in his attendance on the poor, whom he waited on in all places and at all hours, by day and night, in the garrets and cellars of St. Giles's, and made a surprising reformation upon many of them. As an antiquarian he was almost unrivalled in numismatic knowledge; on which account he was made a fellow of the Society of Antiquaries, and assistant librarian to the British Museum. He died January 25th, 1795.

**SOUTHSAY**, *v. n. & n. s.* Corrupted from **SOOTHSAY**, which see. To predict; prediction.

All those were idle thoughts and fantasies, Devices, dreams, opinions unsound, Shews, visions, *southways*, and prophecies, And all that feigned is, as leasings, tales, and lies.

*Faerie Queene.*

Young men, hovering between hope and fear, might easily be carried into the superstition of *south-saying* by names.

*Cunden.*

**SOUTHWARK**, an ancient borough of England, adjacent to London, on the opposite bank of the Thames. It was called by the Saxons Suth, or the South work, in respect to some fort bearing that aspect from London. It was also called the Borough, or Burg, and was long independent of London; but, in consideration of the inconveniences arising from the escape of malefactors into this place, it was in 1327 granted by Edward III. to the city on payment of £10 annually. It was then called the village of

Southwark, afterwards the bailiwick, and the mayor and commonalty of London appointed the bailiff. This power, however, not being sufficient to remedy the evil, in the reign of Edward VI. it was formed into a twenty-sixth ward by the title of Bridge-Ward Without. In consequence of this it was subjected to the lord mayor of London, with the steward and bailiff. But this was only the division called the Borough Liberty. For the city division the lord mayor by his steward holds a court of record every Monday at the sessions-house on St. Margaret's Hill in this borough, for all debts, damages, &c. The other division is called the Clink, or the Manor of Southwark, and is subdivided into the Great Liberty, the Guildhall, and the King's Manor; for each of which subdivisions a court-leet is held. A court-house, called Union-hall, has been built in the new street called Union Street. The Clink liberty is under the jurisdiction of the bishop of Winchester. Court-leets are also kept at Lambeth, Bermondsey, and Rotherhithe, districts adjoining to the Borough. The Marshalsea prison is the county jail for felons, and the admiralty jail for pirates. In this quarter is also the King's Bench prison, the rules of which are above two miles in circuit, and comprise the greatest part of St. George's Fields. Here was committed Henry, prince of Wales, by the spirited and honest judge Gascoigne. In this prison, the allowance being better than that of the common prisons, many debtors remove themselves hither by habeas corpus.

Southwark is first mentioned in history on occasion of earl Godwin's sailing up the river to attack the royal navy of fifty ships lying before the palace of Westminster, in 1052, when ' he went ad Suthweorce,' and stayed there till the return of the tide. Southwark consists of the parishes of St. Olave, St. Saviour, St. George, and St. Thomas. That of Christ Church is in Surry. The principal church in Southwark is that of St. Saviour, formerly a priory of regular canons. Being dedicated to the Virgin Mary, and situated near the Thames, it was called St. Mary Over Ree, or Overy. It is built like a cathedral, with three aisles from east to west, and a cross aisle. It is the largest parish church in England, the three aisles measuring 269 feet in length, and the cross aisle 109 feet. The height within is forty-seven feet, and it has a tower with four spires 150 feet high. It has lately been extensively repaired. Near St. George's church stood the magnificent palace of Charles Brandon, duke of Suffolk, the deserved favorite of Henry VIII. After his death in 1545 it came into the king's hands, who established here a royal mint. It was then called Southwark place. Edward VI. once dined in it. The mint became a sanctuary for insolvent debtors, and at length the pest of the neighbourhood, by giving shelter to villains of every species; till parliament, by the stats. 8 & 9 W. III., 9 Geo. I., and 11 Geo. I., abolished its abused privileges. In the parish of Christ Church, near the water on Bankside, stood Paris garden, one of the ancient play-houses. Ben Jonson performed the part of Zulman in it. It was much frequented on Sundays. This profanation, Mr. Pennant ob-

serves, was at length fully punished by the dire accident which befel the spectators in 1582, when the scaffolding suddenly fell, and multitudes of people were killed or miserably maimed. The manor of Paris garden was then erected into a parish, and a church founded under the name of Christ's. Beyond this place of amusement were the bear-garden and place for baiting of bulls, the British circi, those disgraces of English taste. This was then an amusement for persons of the first rank. Elizabeth caused even the French ambassadors to be diverted with these bloody spectacles. Near these scenes of cruel pastime were the bordello or stews, licensed by government. They were farmed out. Even a lord mayor did not disdain to rent them to the froes, or bawds of Flanders. Among other regulations no stewardholder was to admit married women; nor were they to keep open their houses on Sundays; nor were they to admit any women who had on them the perilous infirmity of burning. These infamous houses were very properly suppressed by Henry VIII. Besides several alms-houses here are St. Thomas's and Guy's hospitals, two of the noblest endowments in England. The former was first erected in 1215 by Peter de Rupibus, bishop of Winchester, who endowed it with land to the amount of £343 a year. In 1551, after the citizens of London had purchased of Edward VI. the manor of Southwark and its appurtenances, of which this hospital was a part, they spent £1100 in repairing and enlarging the edifice, and admitted into it 260 patients; upon which the king in 1553 incorporated this hospital with those of Christ Church and Bridewell in London. The building being much decayed, three beautiful squares adorned with colonnades were erected by voluntary subscription in 1693, to which in 1732 the governors added a magnificent building, consisting of several wards. Near St. Thomas's stands Guy's Hospital, the most extensive charitable foundation that ever was established by one man in private life. The founder was Thomas Guy, a bookseller in Lombard Street, who lived to see the edifice roofed in; and at his death, in 1724, left £238,292 16s., including the expense of the building, to finish and endow it. See Guy. It was incorporated by charter from parliament, and the first governors were appointed in 1725. In St. George's Fields, west of the king's-bench prison, is the Magdalen, for the reception of penitent prostitutes; a little farther is situated the Asylum for orphan girls; and not far distant the Westminster Lying-in hospital. St. George's Fields are now covered with new buildings. At Lambeth the archbishops of Canterbury had a palace. According to Mr. Pennant it was in earlier times a manor royal; for the great Hardiknut died here in 1042, in the midst of the jollity of a wedding dinner; and here the usurper Harold II. snatched the crown and placed it on his own head. At that period it was part of the estate of Goda, wife to Walter earl of Mantes, and Eustace earl of Boulonge; who presented it to the church of Rochester, but reserved to herself the patronage. It became, in 1197, the property of the see of Canterbury by exchange. The building was improved by Langton, but was afterwards neg-

lected, and became ruinous. 'No pious zeal (says Mr. Pennant) restored the place, but the madness of priestly pride. Boniface, a wrathful and turbulent primate, elected in 1244, by way of expiation for a riot he had committed, rebuilt it with great magnificence. It was very highly improved by the munificent Henry Chicheley, who was primate from 1414 to 1443. I lament to find so worthy a man the founder of a building so reproachful to his memory as the Lollard's Tower, at the expense of nearly £280. Neither Protestants nor Catholics should omit visiting this tower, the cruel prison of the unhappy followers of Wickliffe. The vast staples and rings to which they were chained, before they were brought to the stake, ought to make Protestants bless the hour which freed them from so bloody a religion.' During the civil wars of the seventeenth century, this palace suffered greatly; but at the restoration the whole was repaired by archbishop Juxton. The parish church of Lambeth, which is near the palace, has a plain tower; the architecture is Gothic. It has the figure of a pedlar and his dog painted in a window. The pedlar bequeathed the piece of ground called Pedlar's Acre to the parish. In the church-yard is the monument of the three great travellers named Tradescant.

The charitable institutions in Southwark are extremely numerous and respectable; the principal are, the Magdalen Hospital, for Female Penitents; the School for the Indigent Blind; the Philanthropic Society, for the protection and reform of the orphans and children of convicted felons; the New Bethlehem Hospital for lunatics; the Surry Dispensary; many alms-houses for infirm old people; two free grammar-schools; the Royal Lancasterian Free-School, and a great number of other charities of less importance. The county prison, in Horsemonger Lane, is a commodious building, erected on the late Mr. Howard's plan; attached to which is a new and spacious sessions-house. The Dissenters also enjoy numerous commodious places of worship. In the Borough are also Union Hall, a public police-office, the Town-hall, and the Borough Compter, for the confinement of prisoners previous to their examination. The Surry Theatre is a neat edifice, and a much frequented place of amusement. An elegant cast-iron bridge of three arches, called Southwark Bridge, has been erected over the Thames from Bankside to Queen Street, in the city, which has greatly contributed to the improvement of that part of the borough; and the new London bridge, constructed in granite, from designs by Mr. Rennie, is one of the finest hydraulic edifices which bestride the Thames. Southwark sends two members to parliament, who are returned by about 3200 of the inhabitants, paying scot and lot. The Bridge House, near St. Olave's Church, was formerly used as a store-house for keeping the materials for repairing the bridge, but is now converted into offices belonging to the Bridge House estate. Adjoining the Bridge House yard formerly stood the city residence of the abbot of St. Augustines, in Canterbury, the site of which is now converted into a wharf. On the east side of Bridge Yard also

stood the mansion of the abbot of Battle, in Sussex; the site whereof is now called Battle Bridge; opposite to this on the south were its spacious gardens, wherein was a labyrinth, or maze, the name of which is also derived, though the place is covered with buildings. Near St. Saviour's church is the Borough market, for all kinds of provisions, but principally vegetables.

SOUTHWELL, a market-town, in the county of Nottingham, situated on an eminence, on the banks of the river Greet, in a well-wooded country, and enclosed by an amphitheatre of hills. The town was formerly much more considerable than at present; but as the hamlets of East and West Thorpe, which are contiguous, appear to form part of it, and go under the name, Southwell has still the appearance of a pretty large place. It is divided into a civil and ecclesiastical portion. The former, called the Burgrave or Burridge, comprehends all the space between the market-place and the river; the latter, the Prebendage, includes the collegiate church and its property. This church forms the only interesting object in the town, and has been long celebrated for the antiquity, beauty, and variety, of its architecture. It consists of a nave, with two aisles, two towers at the west end, a transept, a choir with aisles, and a chapter-house. The length from east to west is 306 feet, the width of the transept from north to south is 121 feet, and the breadth of the nave fifty-nine feet. The foundation of it is ascribed to Paulinus, archbishop of York, who was sent by pope Gregory, in 627, by the advice of St. Augustine, to establish Christianity in Britain. During a succession of ages it was liberally patronised by monarchs and nobles, and distinguished by the decrees of popes and prelates, until it shared the fate of other collegiate establishments in the reign of Henry VIII. It was in that reign declared by act of parliament the mother church of Nottinghamshire. In Edward VI.'s reign the chapter was dissolved and granted to the duke of Northumberland, but was restored by queen Mary. It suffered much in the civil wars, and has not yet recovered the damage done by Cromwell's troops, who converted it into a stable. The architecture is Saxon and Norman; the great mass of the building has sustained little alteration, except in some of the windows, whose Saxon arches have given place to the Gothic pointed style of the fourteenth century. There is a tradition that the oldest part, which is pure Saxon, and where the pillars are large, plain, and singularly massive, was built in the short reign of Harold; and, on the whole, there is little doubt that, excepting St. Augustine's at Canterbury, this is the oldest building now in existence in England. The entrance is by a Gothic gateway, from which there is a direct view of the west front.

The chapter-house is a beautiful structure, and the arch of entrance forms a most striking object. Of the tombs in this church is a large alabaster one to archbishop Sandys. In the church-yard was a college for the chantry priests. The chantry itself has lately been taken down, and an excellent school erected on the ground. The

whole establishment of the college consists of sixteen prebendaries, six vicars-choral, one organist, and other officers. Two fellowships and two scholarships in St. John's College, Cambridge, are in the presentation of Southwell. They were founded by Dr. Reton, canon of Salisbury, in the time of Henry VIII. The archbishop of York had formerly a palace here, situated on the south side of the church yard; the ruins of it are still extensive, and, being overshadowed with ivy, form a great ornament to the place. The archiepiscopal parks were four in number, but these have been divided and enclosed since the destruction of the palace in the civil wars, during which Charles I. was often here. On the north side of the church-yard is a very convenient public walk, made in 1784. The county bridewell here is used as a prison for the various manors belonging to the archbishopric in the county. It was built in 1656 and 1787. This prison, called the Nottinghamshire house of correction, has also received considerable additions to its size during the last two or three years. It is under the immediate direction of county magistrates, who are appointed visiting justices, a resident governor, a surgeon, chaplain, and turnkeys. The adaptation of the structure, and the regulations and discipline, are highly and warmly spoken of. Southwell possesses no trade of any consequence. The government of the town is divided between the clergy and the laity, the former ruling over the prebendage, and the latter over the Burgrave. Its civil jurisdiction extends over twenty towns or villages; its ecclesiastical over twenty-eight. The civil administration is held at Southwell and Scroby, by the justices, who are nominated by the archbishop, but act under a commission from the crown. The chapter, in the person of the vicar-general, exercises all the episcopal functions except ordination and confirmation. Southwell is thought to have been a Roman station. Market on Saturday, and an annual fair on Whit-Monday. Fourteen miles north-east of Nottingham, and 132 N. N. W. of London.

SOUTHWOLD, a sea-port, market-town, and bathing-place of Suffolk, is situated on the Blyth, and on a point of land almost surrounded by the sea; twenty miles south from Yarmouth, and 105 north-east from London. The church is a fine building, 143 feet long, and fifty-six wide; and the town is governed by two bailiffs, a recorder, and twelve aldermen, who hold their meetings in the Guildhall. It is a member of the port of Yarmouth, and its creek spreads to Dunwich and Walderswick. Here is a considerable trade in the herring and sprat fishing, in salt and old beer; and the town has risen to its present consequence from the decline of Dunwich. The harbour has been repaired and improved by the erection of two piers. The bay, called Solebay, is remarkable in history for an engagement in 1666, between the British and Dutch fleets, when the latter was defeated with the loss of nearly seventy ships, while the English lost only one. High water, at full and change, half past nine o'clock. This part of the coast is noted for the arrival and departure of

swallows from and to the continent. Market on Thursday. Fairs, Monday after Trinity-Sunday, and the 24th of August.

SOUTH-WEST ISLES, seven small islands dependent on the Bandas, of which Kissier is the chief, lying to the south-west. They are low, and surrounded by shoals and rocks. The natives are represented as a ferocious and perfidious people, being an intermediate race between the Papuas or aborigines of that country, and the Caffres of Africa. Their number in 1796 is said to have amounted to 36,266, of whom 2322 had been converted to Christianity. The Dutch had an establishment for commercial purposes on these islands, which produce sandal-wood, some venison, and slaves.

**SOUVENANCE**, *n. s.* Fr. *souvenance*. Remembrance; memory. A French word happily disused, says Johnson.

If thou wilt renounce thy miscreance,  
Life will I grant thee for thy valiance,  
And all thy wrongs will wipe out of my *souvenance*.  
*Spenser.*

Gave wondrous great countenance to the knight,  
That of his way he had no *souvenance*,  
Nor care of vowed revenge.  
*Id.*

**SOW**, *n. s.* Sax. *pugn*; Belg. *teng*, *souwe*; Goth. *soa*; Teut. *sau*; Lat. *sus*; Gr. *ovc*; Hind. *soo*. A female pig; the female of a boar.

Boars have great fangs, *sows* much less.  
*Bacon's Natural History.*

For which they scorn and hate them worse  
Than dogs and cats do *sow* gelders.  
*Hudibras.*

A *sow* beneath an oak shall lie along,  
All white herself, and white her thirty young.  
*Dryden.*

The *sow* gelder's horn has something musical in it, but this is seldom heard.  
*Addison's Spectator.*

**Sow**, *v. a.* For **SEW**. To join by needle-work.

Some tree, whose broad smooth leaves together  
*sowed*,  
And girded on, may cover round.  
*Milton.*

**Sow**, *v. n. & v. u.* } Saxon *papan*; Goth.

**SOWER**, *n. s.* } *suan*; Belg. *suyen*. To scatter seed; propagate by seed; spread; be-sprinkle: the sower is the scatterer of seed.

They that *sow* in tears shall reap in joy.  
*Psalm cxxvi. 5.*

Frowardness is in his heart: he deviseth mischief continually, he *soweth* discord.  
*Proverbs vi. 14.*

He shall give the rain of thy seed, that thou shalt sow the ground withal.  
*Isaiah xxx. 23.*

**Sow** to yourselves in righteousness, and reap in mercy.  
*Hebrews.*

A *sower* went forth to *sow*.  
*Matthew xiii. 3.*

He that *soweth* to his flesh shall reap corruption; but he that *soweth* to the spirit shall reap life everlasting.  
*Galatians vi. 8.*

Like was not to be found,  
Save in that soil where all good things did grow,  
And freely sprung out of the fruitful ground  
As incorrupted nature did them *sow*.  
*Faerie Queene.*

The one belongeth unto them that seek, the other unto them that have found happiness; they that pray do but yet *sow*, they that give thanks declare they have reaped.  
*Hooker.*

From Ireland come I with my strength,  
And reap the harvest which that rascal *sowed*.  
*Shakespeare.*

Many plants which grow in the hotter countries, being set in the colder, will, being *sown* of seeds late in the spring, come up, and abide most part of the summer.  
*Bacon.*

They are *sowers* of suits, which make the court swell, and the country pine.  
*Id.*

Terming Paul and his doctrine a *sower* of words, a very babbler or trifler.  
*Hakewill on Providence.*

A goodly country, naturally beautified with roses, *sown* with peace.  
*Heylyn.*

It is thrown round, as grain by a skilful *sower*.  
*Derham.*

He *sowed* with stars the heaven, thick as a field.  
*Milton.*

To *sow* a jangling noise of words unknown.  
*Id.*

The intellectual faculty is a goodly field, capable of great improvement; and it is the worst husbandry in the world to *sow* it with trifles or impertinencies.  
*Hale's Origin of Mankind.*

When to turn  
The fruitful *soil*, and when to *sow* the corn,  
I sing, Mæcenas.  
*Dryden's Georgicks.*

The proud mother views her precious brood,  
And happier branches, which she never *sowed*.  
*Dryden.*

Since then they stand secured by being joined,  
'Twere worthy a king's head to *sow* division,  
And seeds of jealousy, to loose those bonds.  
*Rowe.*

Born to afflict my Marcia's family,  
And *sow* dissension in the hearts of brothers.  
*Addison's Cato.*

An hundred and fifty of their beds, *sown* together, made up the breadth and length.  
*Gulliver.*

**SOWING**, in agriculture and gardening, the depositing any kind of seed in the earth for a future crop.

**SOWING OF SEEDS**, in horticulture. Different methods are made use of, according to the sorts; as broad-cast *sowing* and raking-in, drill *sowing*, bedding-in *sowing*, &c.; in each of which there are some advantages in different ways.

The first is the most common and expeditious way for many of the principal crops, and is performed by sowing the seed with a spreading cast evenly all over the surface of the ground, either in one continued plat, or when divided into beds, which is immediately raked with a large rake, to bury all the seeds a due depth in the earth; some requiring to be raked in as light as possible, others half an inch, or an inch or more deep, according to their kinds and sizes, &c. In preparing for this method, the ground is previously dug over in the common way, or in such a manner as is necessary; making the surface level with the spade, as the work proceeds; and, according to the nature of the seed, sowing it as soon as possible afterwards. And this sort of sowing should generally be performed in dry weather, particularly the early sowings in winter and spring; but in hot weather, in summer and autumn, it may often be eligible to take advantage of sowing immediately after a shower of moderate rain. The sowing itself is effected occasionally both with an open and locked hand. In the former case it is performed by delivering the seeds with an open hand, and broad-spreading cast, as practised in sowing corn in the open fields, previously stepping out the ground in breaks or certain widths, as a guide to sow with the greater regularity; proceeding with the sowing along each space with a regular step and cast,

giving the hand a proper sweeping cant forward, fully expanded at the delivery of the seeds, making them spread abroad evenly in every part; and thus proceeding up one space, and down another, till finished; which method is practised in large kitchen grounds, in sowing any considerable space in one continued plat. But the latter is practised occasionally, both in sowing large continued plats of ground, and narrow beds, &c.; but more generally the latter, especially when intended sowing them bed and bed separately; or on narrow borders, and other small plats of ground, commonly sowing or delivering the seeds with a locked or close hand, discharging them from between the fore finger and thumb; opening or pinching the thumb more or less, according to the size and nature of the seeds, and thickness they require to be sown; giving the hand a sort of jerking turn, or cant forward, at the delivery, to cause the seeds to spread regularly, and in an exact manner. As soon as the seeds are sown, they should be raked in.

But where the ground is loose, light, and dry, it is a good practice, after sowing, to tread them in evenly by treading the ground all over lightly and regularly. It is also sometimes proper to pare up the loose earth of the alleys an inch or two deep, and spread it thinly over the surface. The work of treading in the seeds is performed with the feet nearly close together, taking short regular steps, treading the surface all over, once in a place, with but small spaces between the steppings. And in extensive market kitchen-gardens, where large tracts of ground are sown at once, instead of raking in the seed, they for the sake of expedition and cheapness, have light short-tinned harrows to draw with men, with which they harrow in the seeds; and sometimes in light dry ground, and a dry surface, they afterwards roll the ground with a light wooden roller, to close and smooth the surface over the seeds more effectually; performing it when the surface is a little dried, so as not to adhere to the roller.

In large garden-farms in fields, where they commonly plough and harrow the ground for the reception of the seeds, they practise only the broad-cast sowing in continued tracts, for almost all their esculent seeds, except pease, beans, and kidney-beans; the ground being prepared by ploughing, and afterwards rough-harrowed, to smooth the surface moderately; the seeds being then sown in the spreading open-handed manner, and harrowed in either with a light short-toothed horse-harrow, or by men for particular crops; when, if very dry weather, they roll the surface afterwards with a wooden roller, drawn by horses, &c., to smooth the surface. In these sowings, the land may either be formed into small beds of four or five feet in width, sowing each in a separate manner; or the whole may be rendered even, and then sown all over the surface, to be afterwards trodden into beds of suitable breadths, as already suggested. The intervals in both cases, when the sowing is finished, are to be thinly pared and cast over the beds, which are then raked over in a regular neat manner, the whole length of them. The forming the land into small beds may, in some

cases, be the most desirable and advantageous practice; as where it is wet, and not capable of bearing treading, the intervals can be stood in not only to sow the seed, but perform the raking of it in, without injuring the beds by trampling upon them. Besides, when weeding, watering, or transplanting the crops become necessary, they are capable of being stood in for performing such works, as well as for culling and gathering the produce of them. In kitchen-gardens, however, where there is a scarcity of ground, or where it is of consequence to make the most of every part of such ground, and to use the utmost expedition in sowing or putting in the seed, the whole surface method, in one continued plat, may be the most eligible plan of seeding the land, especially in very large grounds, for the main crops of such kinds, as the carrot, the parsnip, turnip, leek, onions, spinach, lettuce, radish, and some others. In this mode great care is to be taken in raking and harrowing in the seed, not to draw the mould and seed into lumps or heaps, but to bury it regularly in the soil. Where the seed has been trodden in, but slight raking is necessary. This mode of sowing and covering in the seed may be had recourse to for most of the esculent crops, some flower plants, &c.

The second method of sowing is necessary for many sorts of seeds, esculent, flower, tree, and shrub kinds in the nursery, both for the plants to remain where sown, and for transplantation; which is performed in drills, from a quarter or half an inch to two or three inches deep, according to the sizes and sorts of seeds; which being sown evenly along the bottom of the drill, the earth is drawn evenly over them with a hoe or rake, the depth as above, and the surface lightly raked smooth. This mode is always proper for large seeds, such as pease, beans, kidney-beans, and many large kinds of tree and shrub seeds, nuts, and berries; it being not only the most ready method of committing those large seeds to the ground the proper depth, but, by being in rows at a distance, best suits the nature of the growth of these sorts of plants, and their methods of culture. Many kinds of small seeds are also the most conveniently sown and cultivated in drills; such as several of the kitchen-garden plants, as parsley, chervil, coriander, all the sorts of small sallading, and sometimes spinach, beet, &c.; also some of the aromatics, when designed as edgings; and also occasionally in rows in beds, both to remain and for transplanting, such as thyme, savory, hyssop, &c.; likewise many sorts of flower-seeds for transplantation, and sometimes to remain. It is performed by drawing the drills with a common drawing-hoe, larger or smaller in proportion to the sorts of seeds to be sown; setting a line as a guide to draw the drills straight by, which are drawn of different depths, as the sorts and sizes of the seeds may require, and at proportionable distances, from three or four inches to as many feet, according to the nature of the plants. Sometimes, when very small drills are required for fine or small seeds, to be sown in a bed, border, or hot-bed, it is done with the end of the finger, or with the end of a small flat stick. The seeds should in general be sown and covered in directly, if the ground be dry

and in good order; but if the soil be wet, especially at an early season, it may be proper to suffer the drill to lie or be open and exposed to the sun and air an hour or two, or more, to dry a little, particularly for tender seeds in early sowings, in the full ground.

Drill sowing is performed for the most part with a locked or closed hand, discharging the seeds from between the fore-finger and thumb, scattering them evenly along the bottom of the drill, some sorts requiring to be sown thinly just along the middle, such as in the angular drills drawn corner ways of the hoe, for peas, and many other larger seeds; also sometimes for smaller seeds when intended for edgings; but in the shallow flat-bottomed drills, it is generally intended for the seeds to be scattered evenly the whole width of the drill, thicker or thinner, according to the nature of the growth of their respective plants. The work of covering or turning in the earth into the drills over the seeds, may be performed occasionally with the rake, hoe, and feet. This is a manner of sowing which has not only the advantage of putting in the seeds to the most equal, regular, and suitable depths, but of placing them in rows at such distances as may admit the sun, light, and air, in the most effectual manner for promoting the growth of the plants as crops. Besides, the moulding up, and necessary culture afterwards, can be better and more beneficially performed.

In the last method of sowing, the ground dug and formed into four or five feet wide beds, with alleys a spade's width or more between bed and bed, and the earth drawn off the top of the bed with a rake or spade half an inch, or an inch or more deep, into the alley, the seed is sown all over the surface of the bed; which done, the earth in the alley is immediately, either with a rake, drawn spreadingly upon the bed again over the seeds the same depth, or spread over with a spade, and the surface raked smooth and even in a similar manner. It is often practised in the nurseries, especially in sowing some large sorts of seeds, as well as others, but not very frequently in kitchen gardens. It is not so expeditious as the broad-cast sowing, but is very proper for many sorts of small seeds, and many sorts of the tree and shrub kind, being a very regular method of sowing, so as to cover all the seeds an equal depth, and is performed two or three different ways; such as by the rake, by the spade, and by sifting. It is also sometimes performed with the rake and spade together, particularly when intended to sow any large seeds a good depth, using the rake to shave or rake the earth from off the bed into the alleys; or, if it cannot be conveniently performed with the rake a proper depth, it is effected with the spade, trimming or paring the earth evenly off the surface into the alleys; then sowing the seeds all over the surface; and if they are of the larger berry, nut, or stone kind, or any other large seed, previous to covering them, pressing or patting them all evenly down into the earth with the back of the spade; and then, either with the rake or spade, spreading the earth out of the alleys evenly over them; though if it is a deep covering, especially when taken off with the

spade, it is most eligible to use the same implement in returning it, being careful to spread it evenly, to cover the seeds all equally a proper depth, smoothing the surface with the rake in finishing the work.

SOW'INS, *v. n.* Sax. *recon*, to drain off. Flummery, made of oatmeal somewhat soured.

These *sow'ins*, that is, flummery, being blended together, produce good yeast.

*Mortimer's Husbandry.*

See where Norah with the *sow'ins* comes. *Swift.*

SOWL, *v. a.* From sow, as hogs are pulled by dogs, Skinner; from sole, a strap, a rein, Kennet; From Sax. *rol*, a rope.—*Thomson.* To pull by the ears.

He'll go and *sowl* the porter of Rome gates by the ears. *Shakespeare.*

SOWTHIISTLE, *n. s.* Latin *sonchus*. A weed.

*Sowthistles* though coney's eat, yet sheep and cattle will not touch; the milk of which, rubbed on warts, weareth them away, which sheweth it is corrosive.

*Bacon.*

SOY, or Sooju, a celebrated pickle, much used by the Japanese, made from the mame or beans of the dolichos soja. See DOLICHOS. To make it they take equal quantities of the beans boiled to a certain degree of softness; of muggi, or corn, whether barley or wheat, roughly ground; and of common salt. Having properly mixed the beans with the pounded corn they cover up the mixture, and keep it for a day and a night in a warm place to ferment; then putting the mass into a pot they cover it with the salt, pouring over the whole two measures and a half of water. This compound substance they carefully stir at least once a day, for two or three months; after which they filtrate and express the mass, preserving the liquor in wooden vessels. The older it is, the better and the clearer; and if made of wheat, instead of barley, greatly blacker. The first liquor being removed, they again pour water upon the remaining mass; which, after stirring for some days, as before, they express a second time, and thus obtain an inferior sort of soy.

SOZOMEN, or SOZOMENUS (Hermias), an ecclesiastical historian of the fifth century, was born in Bethulia, a town of Palestine. He was educated for the law, and became a pleader at Constantinople. He wrote an Abridgment of Ecclesiastical History, in two books, from the ascension of our Saviour to the year 323. This compendium is lost; but a continuation of it in nine books, written at greater length, down to 440, is still extant. He seems to have copied Socrates, who wrote a history of the same period. The style of Sozomenus is more elegant; but in other respects he falls short of that writer, displaying throughout his whole book an amazing credulity and a superstitious attachment to monks and the monastic life. The best edition of Sozomenus is that of Robert Stevens in 1544. He has been translated and published by Valesius, and republished with additional notes by Reading at London, 1720, in 3 vols. folio.

SOZOMENUS (John), a learned civilian of Venice, who flourished in the seventeenth century. He published a new translation of Plato's ten books *De Republica*; which he altered from

their original form of dialogues into a connected dissertation.

**SPA**, a town of the Netherlands, in the province of Liege, is situated on the banks of a rivulet, at the end of a deep valley, having various high and steep mountains at a short distance, so that the country around forms a beautiful landscape. The town is small, and a number of its houses are of wood. Its four streets, however, are wide and regular, built in the form of a cross.

Spa can boast of little else than its far-famed medicinal springs. Of these, to the number in all of six or seven, the principal are the Pouhon, Geronstere, Sauveniere, and Tonnelet. The Pouhon rises from the hill to the north, but is made to issue from a fountain in the middle of the town; the others are at a distance of from one to two miles. The season commences with the warm weather, and lasts commonly during four months. The accommodations, both at private lodgings and hotels, are in general good. The habit of riding every morning to the more distant springs is very favorable to health. The rest of the day is passed either at a public breakfast in the Vauxhall, one of the finest buildings of this kind on the continent, on the public walks, or in the chase; for the adjacent country is abundant in game. Spa contains a theatre and commodious ball-rooms. The public walks are pleasant: and the town has been allowed a neutrality in some of the latest modern wars. The resident inhabitants are not above 3000.

Some have supposed that the medicinal waters of this place are those mentioned by Pliny in his Natural History; but others apprehend that those were the waters of Tongrés. These waters were at first the property of the community of Spa, but they were afterwards taken possession of by a bishop of Liege, until an appeal was made to the imperial chamber, which restored them to the original proprietors, who imposed a small duty on every flask exported. In 1794 Spa was taken by the French, and long remained attached to the empire.

The Pouhon spring is the strongest chalybeate, and is in its most perfect and natural state in cold dry weather; but in warm moist weather it loses its transparency, appears turbid or wheyish, contains less fixed air or carbonic acid gas, and is partly decomposed. This water, which is colder by many degrees than the heat of the atmosphere, is supposed to contain the greatest quantity of fixed air of almost any acidulous water; and in consequence it has a remarkable sprightliness and vinosity, and boils by mere warmth; but this soon flies off if the water be left exposed, though it may, in a great measure, be preserved in well-corked bottles. It is capable of dissolving more iron than it naturally contains, and of thus becoming a stronger chalybeate, on account of the great quantity of fixed air which it contains: and for the same reason an ebullition is raised in it on the addition of acids, which disengage its fixed air. This water mixes smoothly with milk, whether it be cold or of a boiling heat. The Tonnelet and Geronstere springs are weaker chalybeates, but brisker and more spirituous; the Groesbeck, Sauveniere, and

Wartroz, still weaker, but highly impregnated with calcareous and selenitical earths, and contain also a greater proportion of the fossil alkali. The Geromont is likewise a weak chalybeate, but contains a great deal of calcareous and selenitical earths, and about three times as much alkaline salt as any of the others. The last four waters, therefore, will be better in disorders arising from an acid cause, and as diuretics, particularly the Geromont. The Bru, or Churon, approaches to the nature of the Tonnelet.

All the waters comprehended under this denomination abound with fixed air; they also contain more or less iron, fossil alkali, and calcareous and selenitical earths, together with a small portion of sea-salt, and an oily matter common to all waters. These ingredients are kept suspended, and in a neutral state, by means of the fixed air, on which the virtues chiefly depend; though they are probably rendered more active and penetrating, both in the first passages, and also when they enter the circulation, by means of that small portion of iron, earth, salt, &c., with which they are impregnated. These waters are diuretic and sometimes purgative; and, like other chalybeate waters, they tinge the stools black. They exhilarate the spirits much better than wine or spirituous liquors, and their general operation is by strengthening the fibres. They cool and quench thirst much better than common water.

In cases of languor they are found excellent, particularly when it is connected with a relaxation of the stomach, and of the fibres in general, or where the constitution has been weakened by diseases, or by a too sedentary life; in such asthmatic disorders and chronic coughs as proceed from too great a relaxation of the pulmonary vessels; in gout and rheumatism; in obstructions of the liver and spleen; in scorbutic and other putrid disorders; in hysterical and hypochondriacal complaints; in paralytic disorders; in gleets; in the fluor albus; in fluxes of the belly; in the gravel and stone; in female obstructions; in barrenness; and in most other cases where a strengthening and brisk stimulating resolving chalybeate remedy is wanted: but they are hurtful in hot, bilious, and plethoric constitutions, when used before the body is cooled by proper evacuations; they are also hurtful in cases of fever and heat, in hectic fevers, and ulcerations of the lungs, and of other internal parts, and in most confirmed obstructions attended with fever. The usual season for drinking them is in July and August, or from May to September. The quantity to be drunk is such as the stomach can bear without heaviness or uneasiness: but it is advisable to begin with drinking a glass or two several times in the day, and so increase the quantity daily, as the stomach can bear; and during the course to continue that dose, and to diminish the quantity at the close in the same degree as it was augmented at the beginning. Moderate exercise is proper after drinking. Previous to the use of the water, the first passages should be cleansed by gentle purges; and during the course Rochelle salts or rhubarb may be usefully added to the first glass of water in the morning.

The Spa water is also used externally as an injection in the fluor albus, and in ulcers and cancers of the womb, and also in the gonorrhœa ; it is serviceable for washing venereal aphthæ, and ulcers in the mouth, phagedenic ulcers, by way of gargle for relaxed tonsils, and for fastening loose teeth, and in other cases of relaxation. It is also said to cure the itch, and similar complaints, by washing and bathing.—Elliott's Mineral Waters, p. 201, &c.

**SPAAD**, *n.s.* Lat. *stella terræ*. Probably from **SPADE**, the instrument of digging. A kind of mineral.

English talc, of which the coarser sort is called plaster; the finer, *spaad*, earth-flax, or salamander's hair. *Woodward.*

**SPACE**, *n.s.* Lat. *spatium*. Room ; local  
**SPACIOUS**, *adj.* Extension ; the distance between any two bodies ; any quantity of space or time ; a small time : the adjective corresponding.

Sith for me ye fight, to me this grace  
Both yield, to stay your deadly strife a space.  
*Faerie Queene.*

The former buildings, which were but mean, contented them not : spacious and ample churches they erected throughout every city. *Hooker.*

There was but two ways to escape ; the one through the woods, about ten miles space to Walpo.  
*Knolle.*

I would not be the villain that thou thinkest  
For the whole space that's in the tyrant's grasp,  
And the rich east to boot. *Shakspeare. Macbeth.*  
Oh undistinguished space of woman's wit ! *Shakspeare.*

Convey your pleasures in a spacious plenty ;  
And yet seem cold. *Id.*

There is a competent time allowed every man, and, as it is certain death is the conclusion of it, 'tis possible some space before death. *Hammond.*

In a lever the motion can be continued only for so short a space, as may be answerable to that little distance betwixt the fulciment and the weight. *Within's Mathematical Magick.*

Nine times the space that measures day and night,  
To mortal men, he with his horrid crew  
Lay vanquished, rolling in the fiery gulph,  
Confounded, though immortal. *Milton.*  
Compassion quelled

His best of man, and gave him up to tears  
A space, till firmer thoughts restrained excess. *Id.*

God may defer his judgments for a time, and give a people a longer space of repentance : he may stay till the iniquities of a nation be full ; but sooner or later they have reason to expect his vengeance. *Tillotson.*

Measuring first with careful eyes  
The space his spear could reach, aloud he cries. *Dryden.*

Like an English general will I die,  
And all the ocean make my spacious grave ;  
Women and cowards on the land may lie :

The sea's a tomb that's proper for the brave. *Id.*  
Pure space is capable neither of resistance nor motion. *Locke.*

Space is the relation of distance between any two bodies or points. *Id.*

In such a great ruin, where the fragments are great and hard, it is not possible they should be so adjusted in their fall, but that they would lie hollow, and numerous unfilled spaces would be intercepted amongst them. *Burnet.*

The lives of great men cannot be writ with any to-

lerable degree of elegance or exactness, within short space after their decease. *Addison's Freeholder.*

Space and motion can never be actually infinite : they have a power only and a capacity of being increased without end : so that no space can be assigned so vast, but still a larger may be imagined ; no motion so swift or languid, but a greater velocity or slowness may still be conceived. *Bentley.*

**SPACE**, in geometry, denotes the area of any figure, or that which fills the interval or distance between the lines that terminate it.

**SPADE**, *n.s.* { Sax. *rpaes* ; Belg. Teut. and *Spade'bone*, { Island. *spade* ; Gothic *spad*.

**SPAD'ELE**. { The instrument of digging : spadebone seems so called from its shape ; the shoulderblade : spaddle is a diminutive of spade.

Take the air of the earth new turned up, by digging with the *spade*, or standing by him that diggeth. *Bacon.*

By the shoulder of a ram from off the right side, pared,  
Which usually they boil, the *spade-bone* being bared. *Drayton.*

Many learned men affirm that some isthmuses have been eat through by the sea, and others cut by the *spade*. *Browne.*

His next advance was to the soldier's trade,  
Where, if he did not nimbly ply the *spade*,  
His surly officer ne'er failed to crack  
His knotty cudgel on his tougher back. *Dryden.*

Others destroy moles with a *spaddle*, waiting in the mornings and evenings for them. *Mortimer's Husbandry.*

Here nature never difference made  
Between the sceptre and the *spade*. *Swift.*

**SPADE**, an important tool in rural economy, in the making of fences and embankments of different sorts, as well as in all operations of digging and draining. The most handy and convenient form for common work is probably that in which they are made strong in the back, and have a slight bend or curve in the handle or shaft, as by means of this the labor is performed with greater ease and facility.

The spade is also a garden implement. It is eligible for every garden to be furnished at least with three different kinds of spades, to suit every department of gardening the more commodiously ; such as the common large digging spade, for all common digging and spade-work ; a middling and a small spade for digging particular narrow compartments, and between small plants closely placed in beds and borders, &c. The first is usually from fourteen to fifteen inches long in the plate, and nine broad, narrowing gradually half an inch or an inch less at the bottom. The second sort should be about a foot long in the plate, and seven or eight inches broad. The small spade, which is about eight or nine inches long in the plate, and five wide, is convenient in pointing up or slight digging, and in fresh loosening the surface between close-placed small plants, in beds and borders, &c., where neither of the two former spades can be readily introduced : it is also useful in planting and potting many sorts of small plants, taking up small roots, and other light purposes.

Other sorts are in use for different purposes, as a very small narrow spade, having the plate

about seven inches long, by three and a half or four wide, which is very useful in small compartments of beds, borders, &c., containing some particular close-placed, small plants of flowers, and others, both in occasionally slightly digging, or loosening the earth between them with greater ease and effect, than a larger sized spade; also sometimes in similar compartments, in occasionally trimming round the bottom part of some straggling fibrous-rooted plants; and it is also often useful in taking up and transplanting small plants, and taking off root offsets and slips, in particular sorts, in which a larger spade would not be so convenient. And further, a semicircular or scooped spade is another sort of a smallish size, having the plate made hollow, like a scooped garden-trowel, which is very useful in taking up small plants with balls of earth, to preserve the ball more firmly about the roots. Proper garden spades have the plates wholly of iron, not above a quarter of an inch thick upward, growing gradually thinner from the middle downward; the tree or handle being generally of ash, about two feet long, and an inch and a half thick, with a firm open handle at top, formed out of the solid wood, just big enough to admit of taking ready hold.

SPADICEOUS, *adj.* Lat. *spadiceus*.

Of these five Scaliger beheld, though one was *spadiceous*, or of a light red, and two inclining to red, yet was there not any of this complexion among them.

*Browne's Vulgar Errors.*

SPADIX, in botany, anciently signified the receptacle of the palms. It is now used to express every flower-stalk that is protruded out of a spathe or sheath. The spadix of the palms is

branched; that of all other plants simple. This last case admits of some variety: in calla, dracontium, and pothos, the florets cover it on all sides; in arum, they are disposed on the lower part only; and in zosteria on one side. See BOTANY, Index.

SPAGIRICK ART, a name given by authors to that species of chemistry which treats of metals, and is employed in the search of the philosopher's stone.

SPAGNOLETTO (Joseph Ribera), an eminent painter, born at Xativa, in Spain, in 1589. He travelled into Italy, where he studied painting under the best masters. He then settled at Naples, where, being constantly employed, not only by the viceroy, but by the greatest monarchs in Europe, he accumulated a fortune. His fancy led him to describe subjects of horror, from history sacred and profane; such as the massacre of the innocents at Bethlehem; Ixion on the wheel; Prometheus torn by vultures, and the like. The strength of his expression, and the force of his coloring, give extraordinary relief to his figures, and make his works still esteemed. He died in 1656, aged sixty-seven.

SPA'GYRIST, *n. s.* Barb. Lat. *spagyricus*. A chymist.

This change is so unexampled that though among the more curious *spagyristi* it be very well known, yet many naturalists cannot easily believe it.

*Boyle.*

SPA HIS, horsemen in the Ottoman army, chiefly raised in Asia. The great strength of the grand signior's army consists in the janisaries, who are the foot, and the spahis, who are the horse.

## S P A I N.

SPAIN, a country of Europe, famous both in ancient and modern history, situated in that large peninsula which forms the south-west part of Europe. It is bounded on the south-east and south by the Mediterranean Sea and straits of Gibraltar, on the west and north by the Bay of Biscay and Atlantic Ocean, on the south-west by Portugal, and on the north-east by the Pyrenees, which separate it from France. Its greatest extent or breadth from north to south is stated by Cruttwell at 460 miles; its length from east to west, in the north part, 520 miles; towards the centre 300; and near the south-east more than 900. Brookes makes it 700 miles long and 500 broad.

### PART I. HISTORY OF SPAIN.

The most ancient name of Spain was Iberia, supposed by some to be derived from the Iberians, a people inhabiting Mount Caucasus, a colony of whom settled in this country. Others derive it from the Phoenician word Ebria or Ibra, signifying a passage or limit. By the Romans it was called Spانيا or Hispania, from the Phenician name Sphanija; and this again from Shaphan, a Phenician word signifying a rabbit,

because the western part of Spain abounded with those animals. See SAPHAN.

The constitution of Spain is an absolute hereditary monarchy, where the females inherit in default of the males. The king, in his title, enumerates most of the provinces he has been or is possessed of. He is called his Catholic majesty, or the Catholic king. The hereditary prince is styled prince of Asturias, and the other royal children infants. The kings of Spain are never crowned. For the administration of government and justice, there are several councils and tribunals; as the cabinet council, the privy-council, the council of war, the council of Castile, the council of the inquisition, the council of finances, the council of the Indies, the seven courts of royal audiences, &c. The history of Spain proves how great an influence the Cortes had in former times in the most important affairs; such as war or peace, taxes, &c. But often during a long course of years they have not been assembled, except for the sake of form; and the sovereigns, without formally rejecting their intervention, elude their authority. They promulgate from the throne certain ordinances under the name of pragmatics, the preambles of which give us to understand that they claim the same authority as if they had been published in the assembly of

the Cortes, who are never convoked but at the accession of a new monarch, to administer to him an oath in the name of the nation, and to swear fidelity to him. On such occasions letters of convocation are sent to all the Grandees; to all persons bearing titles of Castile; to all the prelates; and to every city which has a right to send deputies to the Cortes. The first two classes represent the nobility; the priests sit in the name of the clergy: and one magistrate from each of the cities represents the people. Except on such an occasion, the Cortes of the whole kingdom had been assembled before the late revolution but twice during the last century, and only once upon public business, in 1713, when Philip V. convoked them to give their approbation to the pragmatic sanction, which changed the order of succession. They are still consulted, for the sake of form, in certain cases, but without assembling. At their breaking up, in 1713, it was regulated that they should be represented by a permanent committee, whose office it should be to watch over the administration of that part of the taxes called millones, which had been granted under Philip II. They retained the administration of these imposts until 1718, when cardinal Alberoni, whose imperious genius was irritated at such shackles, transferred it to the hands of the sovereign. From that time the assemblies of the deputies of the kingdom have received no more of the revenues of the state than is necessary to pay the salaries and expenses of the members. These are eight in number. All the provinces of Castile unite to nominate six; Catalonia and Majorca appoint one; and the regencies of Valencia and Arragon elect the eighth. These deputies hold their places six years, at the end of which a new election takes place in the same manner. As a relict of their ancient rights, they still retain the privilege of being members of the council of finances, by which the sovereign communicates to the nation the necessity of levying any new tax; and the approbation they are supposed to give to the royal resolution is a shadow of the consent of the Cortes, without which taxes could not formerly be levied. But it is easy to see how feeble this rampart of liberty must be, which is only formed of a small number of citizens, who possess no real power, and are under the control of government, from which they expect preferments. The provinces of Biscay and Navarre, which have particular privileges, send also deputies to the throne; but they do not make a part of the body of the deputies of the kingdom. The administration of Spain is divided into six principal departments. The minister for foreign affairs is the directing minister, and is styled secretary of state. The minister of war has but a circumscribed authority. He is president of the council of war, but the inspectors of the infantry, and those of the cavalry, dragoons, and provincial regiments, draw up a statement of whatever relates to the corps of which they have the direction; and the minister at war has only to present the memorials they give in to the king. The marine minister has no associates. The chiefs of the three departments of Ferrol, Cartagena, and Cadiz, and inspectors of the marine, are named by the

king; but the marine ordinances, prepared by the minister alone, require only the sanction of the king. The minister of the finances should be under the inspection of the superintendent-general of that department: but these two offices were some time since united; the separation of them would multiply, without necessity, the springs of government; and the interests of the state require that they should be simplified as much as permanent forms, those sacred bulwarks of justice and property, will admit.

Spain, as well as the rest of Europe, was probably peopled by the Celtes; but the Spanish historians derive the origin of their nation from Tubal, the fifth son of Japhet, asserting that Spain had been a monarchy for 2226 years before the coming of the Celtes into it. Till the coming of the Carthaginians into Spain, however, nothing certain can be affirmed of the Spaniards; and this happened not long before the commencement of the first Punic war. Their success in reducing the country, and their final expulsion by the Romans, have already been related under the articles ROME and CARTHAGE; we have here therefore only to take notice of the state of Spain under the Roman government, until the Romans were in their turn expelled by the northern barbarians.

At the time of the Roman conquest, Spain, though prodigious quantities of silver had been carried out of it by the Carthaginians and Tyrians, was yet a very rich country. In the most ancient times, indeed, its riches are said to have exceeded what is related of the most wealthy country in America. Aristotle assures us that, when the Phœnicians first arrived in Spain, they exchanged their naval commodities for such immense quantities of silver that their ships could neither contain nor sustain its load, though they used it for ballast, and made their anchors and other implements of silver. When the Carthaginians first came to Spain, they found the quantity of silver nothing lessened, since the inhabitants at that time made all their utensils, and even mangers, of that precious metal. In the time of the Romans this amazing plenty was very much diminished; however, their gleanings were by no means despicable, since in nine years they carried off 111,542 lbs. of silver, and 4095 lbs. of gold, besides an immense quantity of coin and other things of value. The history of Spain will be conveniently divided as follows:—

*From the arrival of the Romans till the destruction of Numantia.*—The Spaniards were always remarkable for their bravery, and some of Hannibal's best troops were brought from thence. But, as the Romans penetrated farther into the country than the Carthaginians had done, they met with nations whose love of liberty was equal to their valor, and whom the whole strength of their empire was scarcely able to subdue. Of these the most formidable were the Numantines, Cantabrians, and Asturians. In the time of the third Punic war, one Viriathus, a celebrated hunter, and afterwards the captain of a gang of banditti, took upon him the command of some nations who had been in alliance with Carthage, and ventured to oppose the Roman

power in that part of Spain called Lusitania, now Portugal. The prætor, named Vetilius, who commanded in those parts, marched against him with 10,000 men; but was defeated and killed, with the loss of 4000 of his troops. The Romans immediately despatched another prætor with 10,000 foot and 1300 horse: but Viriathus, having first cut off a detachment of 4000 of them, engaged the rest in a pitched battle; and, having entirely defeated them, reduced great parts of the country. Another prætor, who was sent with a new army, met with the same fate; so that, after the destruction of Carthage, the Romans thought proper to send the consul, Quintus Fabius, who defeated the Lusitanians in several battles, and regained two important places which had long been in the hands of the rebels. After the expiration of Fabius's consulate, Viriathus continued the war with his usual success, till the senate sent against him the consul Q. Cæcilius Metellus, an officer of great valor and experience. With him Viriathus did not choose to venture a pitched battle, but contented himself with acting on the defensive; in consequence of which the Romans recovered many cities, and the whole of Tarraconian Spain. The other consul, Servilianus, did not meet with the same success; his army was defeated and his camp was nearly taken by Viriathus. Notwithstanding the good fortune of Metellus, however, he was recalled by the intrigues of his countrymen, without being allowed to finish the war he had begun with so much success. In resentment for this he weakened the army under his command; disbanded the flower of his troops, exhausted the magazines, let the elephants die, broke in pieces the arrows which had been provided for the Cretan archers, and threw them into a river. Yet, after all, the army which he gave up to his successor Q. Pompeius, consisting of 30,000 foot and 2000 horse, was sufficient to have crushed Viriathus if the general had known how to use it. But, instead of opposing Viriathus with success, the imprudent consul procured much more formidable enemies. The Termanites and Numantines, who had hitherto kept themselves independent, offered very advantageous terms of peace and alliance with Rome; but Pompeius insisted on their delivering up their arms. Upon this, war was immediately commenced. The consul with great confidence invested Numantia; but, being repulsed with considerable loss, he sat down before Termanitia, where he was attended with still worse success. The very first day the Termanites killed 700 of his legionaries; took a great convoy which was coming to the Roman camp; and, having defeated a considerable body of their horse, pushed them from post to post till they came to the edge of a precipice, where they all tumbled down, and were dashed to pieces. In the mean time Servilian, who had been continued in his command with the title of proconsul, managed matters so ill, that Viriathus surrounded him on all sides, and obliged him to sue for peace. The terms offered to the Romans were very moderate; being only that Viriathus should keep the country he at that time possessed, and the Romans remain masters of all the rest. This peace

the proconsul was very glad to sign, and afterwards got it signed by the senate and people of Rome. The next year Q. Pompeius was continued in his command against the Numantines in Farther Spain, while Q. Servilius Cæpio, the new consul, had for his province Hither Spain, where Viriathus had established his new state. Pompeius undertook to reduce Numantia by turning aside the stream of the Durius, now the Douro, by which it was supplied with water; but in attempting this such numbers of his men were cut off, that, finding himself unable to contend with the enemy, he was glad to make peace with them on much worse terms than they had offered of their own accord. The peace, however, was ratified at Rome; but in the mean time Cæpio, desirous of showing his prowess against the renowned Viriathus, prevailed upon the Romans to declare war against him without any provocation. As Cæpio commanded an army greatly superior to the Lusitanians, Viriathus thought proper to sue for peace; but, finding that Cæpio would be satisfied with nothing less than a surrender at discretion, he resolved to stand his ground. In the mean time, the latter having bribed some of the intimate companions of Viriathus to murder him in his sleep, he by that infamous method put an end to a war which had lasted fourteen years, very little to the honor of the republic.

After the death of Viriathus, the Romans with like treachery ordered their new consul Popilius to break the treaty with the Numantines. His infamous conduct met with the reward it deserved; the Numantines, sallying out, put the whole Roman army to flight with such slaughter that they were in no condition to act during the whole campaign. Mancinus, who succeeded Popilius, met with still worse success; his great army, consisting of 30,000 men, was utterly defeated by 4000 Numantines, and 20,000 of them killed in the pursuit. The remaining 10,000 with their general were pent up by the Numantines in such a manner that they could neither advance nor retreat, and would certainly have been all put to the sword or made prisoners, had not the Numantines, with a generosity which their enemies never possessed, offered to let them depart, upon condition that a treaty should be concluded with them upon very moderate terms. This the consul very willingly promised, but found himself unable to perform. On the contrary, the Romans, not satisfied with declaring his treaty null and void, ordered him to be delivered up to the Numantines. The latter refused to accept him unless he had along with him the 10,000 men whom they had relieved as above related. At last, after the consul had remained a whole day before the city, his successor Furius, thinking this a sufficient recompense to the Numantines for breaking the treaty, ordered him to be received again into the camp. However, Furius did not choose to engage with such a desperate and resolute enemy as the Numantines had shown themselves; and the war with them was discontinued till the year 133 B. C., when Scipio Æmilianus, the destroyer of Carthage, was sent against them. Against this renowned commander the Numantines

tines with all their valor were not able to cope. Scipio, having with the utmost care introduced strict discipline among his troops, and reformed the abuses which his predecessors had suffered in their armies, by degrees brought the Romans to face their enemies, which at his arrival they had absolutely refused to do. Having then ravaged all the country round about the town, it was soon blocked up on all sides, and the inhabitants began to feel the want of provisions. At last they resolved to make one desperate attempt for their liberty, and either to break through their enemies, or perish in the attempt. With this view they marched out in good order by two gates, and fell upon the works of the Romans with the utmost fury. The Romans, unable to stand this desperate shock, were on the point of yielding; but Scipio, hastening to the place, attacked, with no fewer than 20,000 men, the unhappy Numantines, who were at last driven into the city, where they sustained for a little longer the miseries of famine. Finding at last, however, that it was altogether impossible to hold out, it was resolved by the majority to submit to the pleasure of the Roman commander. But this resolution was not universally approved. Many shut themselves up in their houses, and died of hunger, while even those who had agreed to surrender repented their offer, and, setting fire to their houses, perished in the flames, with their wives and children, so that not a single Numantine was left alive to grace the triumph of the conqueror of Carthage.

*From the destruction of Numantia till the murder of Sertorius.*—After the destruction of Numantia, the whole of Spain submitted to the Roman yoke; and nothing remarkable happened till the times of the Cimbri, when a praetorian army was cut off in Spain by the Lusitanians. From this time nothing remarkable occurs in the history of Spain till the civil war between Marius and Sylla. The latter, having crushed the Marian faction (see ROME), proscribed all those that had sided against him whom he could not immediately destroy. Among these was Sertorius, a man of consummate valor and experience in war. He had by Marius been appointed *praetor* of Spain; and, upon the overthrow of Marius, retired to that province. Sylla no sooner heard of his arrival in that country, than he sent thither one Caius Annus with a powerful army to drive him out. As Sertorius had but few troops along with him he despatched one Julius Salinator with a body of 6000 men to guard the passes of the Pyrenees, and to prevent Annus from entering the country. But Salinator having been treacherously murdered, by assassins hired by Annus for that purpose, he no longer met with any obstacle; and Sertorius was obliged to embark for the coast of Africa with 3000 men, being all he had now remaining. With these he landed at Mauritania; but, as his men were straggling carelessly about, great numbers of them were cut off by the barbarians. This new misfortune obliged Sertorius to re-embark for Spain; but, finding the whole coast lined with the troops of Annus, he put to sea again, not knowing what course to steer. In this new voyage he met with a small fleet of Cilician

pirates; and, having prevailed with them to join him, he made a descent on the coast of Yvica, overpowered the garrison left there by Annus, and gained a considerable booty. On the news of this victory Annus set sail for Yvica with a considerable squadron, having 5000 land forces on board. Sertorius, not intimidated by the superiority of the enemy, prepared to give them battle. But, a violent storm arising, most of the ships were driven on shore and dashed to pieces, Sertorius himself with great difficulty escaping with the small remains of his fleet. For some time he continued in great danger, being prevented from putting to sea by the fury of the waves, and from landing by the enemy; at last, the storm abating, he passed the straits of Gades, now Gibraltar, and landed near the mouth of the river Boeotis. Here he met with some seamen newly arrived from the Atlantic or Fortunate Islands; and was so taken with the account which they gave him of those happy regions, that he resolved to retire thither to spend the rest of his life in quiet and happiness. But, having communicated this design to the Cilician pirates, they immediately abandoned him and set sail for Africa with an intention to assist one of the barbarous kings against his subjects who had rebelled. Upon this Sertorius sailed thither also, but took the opposite side; and, having defeated the king named Ascalis, obliged him to shut himself up in the city of Tidgis, now Tangier, which he closely besieged. But in the mean time Pacianus, who had been sent by Sylla to assist the king, advanced with a considerable army against Sertorius. Upon this the latter, leaving part of his forces before the city, marched with the rest to meet Pacianus, whose army, though greatly superior to his own in number, he entirely defeated; killed the general, and took all his forces prisoners. The fame of this victory soon reached Spain; and the Lusitanians, being threatened with a new war from Annus, invited Sertorius to head their armies. With this request he very readily complied, and soon became very formidable to the Romans. Titus Didius, governor of that part of Spain called Baetica, first entered the lists with him; but, being defeated, Sylla next despatched Metellus, reckoned one of the best commanders in Rome, to stop the progress of this new enemy. But Metellus, notwithstanding all his experience, knew not how to act against Sertorius, who was continually changing his station, putting his army into new forms, and contriving new stratagems. On his first arrival he sent for L. Domitius, then *praetor* of Hither Spain, to his assistance; but Sertorius, being informed of his march, detached Hirtuleius, or Herculeius, his *quaestor*, against him, who gave him a total overthrow. Metellus then despatched Lucius Lollius, *praetor* of Narbonne Gaul against Hirtuleius; but he met with no better success, being utterly defeated, and his lieutenant-general killed. The fame of these victories brought to the camp of Sertorius such a number of illustrious Roman citizens, of the Marian faction, that he formed a design of erecting Lusitania into a republic in opposition to that of Rome. Sylla was continually sending fresh supplies to Metellus; but Sertorius, with a

handful of men accustomed to range about the mountains, to endure hunger and thirst, and live exposed to the inclemencies of the weather, so harassed the Roman army, that Metellus himself began to be quite discouraged. At last Sertorius, hearing that Metellus had spoken disrespectfully of his courage, challenged his antagonist to end the war by single combat; but Metellus very prudently declined the combat, as being advanced in years; yet this refusal brought upon him the contempt of the unthinking multitude, upon which Metellus resolved to retrieve his reputation by some signal exploit, and therefore laid siege to Iacobriga, a considerable city in those parts. This he hoped to reduce in two days, as there was but one well in the place; but Sertorius having previously removed all those who could be of no service during the siege, and conveyed 6000 skins full of water into the city, Metellus continued a long time before it without making any impression. At last, his provisions being almost spent, he sent out Aquinius at the head of 6000 men to procure a new supply; but Sertorius, falling unexpectedly upon them, cut in pieces or took the whole detachment; the commander himself being the only man who escaped to carry the news of the disaster; upon which Metellus was obliged to raise the siege with disgrace. And now Sertorius, having gained some intervals of ease in consequence of the many advantages he had obtained over the Romans, began to civilise his new subjects. Their savage and furious manner of fighting he changed for the regular order and discipline of a well formed army; he bestowed liberally upon them gold and silver to adorn their arms, and, by conversing familiarly with them, prevailed upon them to lay aside their own dress for the Roman toga. He sent for all the children of the principal people, and placed them in the great city of Osca, now Heresca, in the kingdom of Arragon, where he appointed them masters to instruct them in the Roman and Greek learning, that they might, as he pretended, be capable of sharing with him the government of the republic. Thus he made them really hostages for the good behaviour of their parents; however the latter were greatly pleased with the care he took of their children, and all Lusitania were in the highest degree attached to their new sovereign. This attachment he took care to heighten by the power of superstition; for, having procured a young hind of a milk-white color, he made it so tame that it followed him wherever he went; and Sertorius gave out to the ignorant multitude that this hind was inspired by Diana, and revealed to him the designs of his énemis, of which he always took care to be well informed by the great numbers of spies he employed. While Sertorius was employed in establishing his authority, the republic of Rome, alarmed at his success, resolved to crush him at all events. Sylla was now dead, and all the eminent generals in Rome solicited this honorable though dangerous employment. After much debate a decree was passed in favor of Pompey the Great, but without recalling Metellus. In the mean time the troops of one Perperna, or Perperna, had, in spite of all that their general could do, abandoned

him and taken the oath of allegiance to Sertorius. This was a most signal advantage to Sertorius; for Perperna commanded an army of 33,000 men, and had come into Spain with a design to settle there as Sertorius had done; but, as he was descended from one of the first families in Rome, he thought it below his dignity to serve under any general, however eminent he might be. But the troops of Perperna were of a different opinion; and therefore, declaring that they would serve none but a general who could defend himself, they to a man joined Sertorius; upon which Perperna himself, finding he could do no better, consented to serve also as a subaltern. On the arrival of Pompey in Spain, several of the cities which had hitherto continued faithful to Sertorius began to waver; upon which the latter resolved, by some signal exploit, to convince them that Pompey could no more screen them from his resentment than Metellus. With this view he laid siege to Lauron, now Lirias, a place of considerable strength. Pompey, not doubting but he should be able to raise the siege, marched quite up to the enemy's lines, and found means to inform the garrison that those who besieged them were themselves besieged, and would soon be obliged to retire with loss and disgrace. On hearing this message, 'I will teach Sylla's disciple,' said Sertorius, 'that it is the duty of a general to look behind as well as before him.' Having thus spoken, he sent orders to a detachment of 6000 men, who lay concealed among the mountains, to come down and fall upon his rear if he should offer to force the lines. Pompey, surprised at their sudden appearance, durst not stir out of his camp; and in the mean time the besieged, despairing of relief, surrendered at discretion; upon which Sertorius granted them their lives and liberty, but reduced their city to ashes.

While Sertorius was thus successfully contending with Pompey, his quæstor Hirtuleius was entirely defeated by Metellus, with the loss of 20,000 men; upon which Sertorius advanced with the utmost expedition to the banks of the Sucro in Tarraconian Spain, with a design to attack Pompey before he could be joined by Metellus. Pompey, on his part, did not decline the combat; but, fearing that Metellus might share the glory of the victory, advanced with the greatest expedition. Sertorius put off the battle till towards the evening; Pompey, though he knew that the night would prove disadvantageous to him, whether vanquished or victorious, because his troops were unacquainted with the country, resolved to venture an engagement, especially as he feared that Metellus might arrive in the mean time and rob him of part of the glory of conquering so great a commander. Pompey, who commanded his own right wing, soon obliged Perperna, who commanded Sertorius's left, to give way. Hereupon Sertorius himself, taking upon him the command of that wing, brought back the fugitives to the charge, and obliged Pompey to fly in his turn. In his flight he was overtaken by a gigantic African, who had already lifted up his hand to discharge a blow at him with his broad sword; but Pompey prevented him by cutting off his right hand

## S P A I N.

at one blow. As he still continued his flight he was wounded and thrown from his horse; so that he would certainly have been taken prisoner had not the Africans who pursued him, quarrelled about the rich furniture of his horse. This gave an opportunity to the general to make his escape; so that at length he reached his camp with much difficulty. But in the mean time Afranius, who commanded the left wing of the Roman army, had entirely defeated the wing which Sertorius had left, and even pursued them so closely that he entered the camp along with them. Sertorius, returning suddenly, found the Romans busy in plundering the tents; when, taking advantage of their situation, he drove them out with great slaughter, and retook his camp. Next day he offered battle a second time to Pompey; but, Metellus then coming up with all his forces, he thought proper to decline an engagement with both commanders. In a few days, however, Pompey and Metellus agreed to attack the camp of Sertorius; Metellus attacked Perperna, and Pompey fell upon Sertorius. The event was similar to that of the former battle; Metellus defeated Perperna, and Sertorius routed Pompey. Being then informed of Perperna's misfortune, he hastened to his relief, rallied the fugitives, and repulsed Metellus in his turn, wounded him with his lance, and would certainly have killed him, had not the Romans, ashamed to leave their general in distress, hastened to his assistance, and renewed the fight with great fury. At last Sertorius was obliged to quit the field and retire to the mountains. Pompey and Metellus hastened to besiege him; but, while they were forming their camp, Sertorius broke through their lines, and escaped into Lusitania. Here he soon raised such a powerful army that the Roman generals, with their united forces, did not think proper to venture an engagement with him. They could not, however, resist the perpetual attacks of Sertorius, who now drove them from place to place, till he obliged them to separate: the one went into Gaul, and the other to the foot of the Pyrenees. Thus did this celebrated commander triumph over all the power of the Romans; and there is little doubt but he would have continued to make head against all the other generals whom the republic could have sent, had he not been assassinated at an entertainment by the infamous treachery of Perperna, in 73 B.C., after he had made head against the Roman forces for almost ten years. Pompey was no sooner informed of his death than, without waiting for any new succors, he marched against the traitor, whom he easily defeated and took prisoner; and, having caused him to be executed, thus put an end, with very little glory, to a most dangerous war.

*From the murder of Sertorius till its conquest by the Moors.*—Many of the Spanish nations, however, still continued to bear the Roman yoke, with great impatience; and as the civil wars which took place first between Julius Cesar and Pompey, and afterwards between Octavianus and Antony, diverted the attention of the republic from Spain, by the time that Augustus had become sole master of the Roman empire, they were again in a condition to assert their liberty.

The CANTABRIANS and ASTURIANS were the most powerful and valiant nations at that time in Spain; but, after incredible efforts, they were obliged to lay down their arms, or rather were almost exterminated, by Agrippa, as is related under these articles. From this time the Spaniards continued in quiet subjection to the Romans; but on the decline of the empire they were attacked by the northern nations, who put an end to the Roman name in the west. As the inhabitants had by that time entirely lost their ancient valor, the barbarians met with no resistance but from one another. In the reign of the emperor Honorius, the Vandals, Alans, and Suevians, entered this country; and, having made themselves masters of it, divided the provinces among themselves. In 444 the Romans made one effort more to recover their power in this part of the world; but, being utterly defeated by the Suevians, the latter established a kingdom there which lasted till the year 584, when it was utterly overthrown by the Goths under Leovigild.

The princes of the Goths, now called Visigoths, or Western Goths, to distinguish them from the Easter or Ostro-Goths (see GOTHUS), continued to reign over a considerable part of Spain till the beginning of the eighth century, when their empire was entirely overthrown by the Saracens. During this period they had totally expelled the eastern emperors from what they possessed in Spain, and even made considerable conquests in Barbary; but towards the end of the seventh century the Saracens overran all that part of the world with a rapidity which nothing could resist; and, having soon possessed themselves of the Gothic dominions in Barbary, they made a descent upon Spain about the year 711 or 712. The king of the Goths at that time was called Roderic, and by his bad conduct had occasioned great disaffection among his subjects. He therefore determined to put all to the issue of a battle, knowing that he could not depend upon the fidelity of his own people if he allowed the enemy time to tamper with them. The two armies met in a plain near Xeres in Andalusia. The Goths began the attack with great fury; but, though they fought like men in despair, they were at last defeated with excessive slaughter and their king himself perished in the battle, being never more heard of. By this battle the Moors in a short time rendered themselves masters of almost all Spain. The poor remains of the Goths were obliged to retire into the mountainous parts of Asturias, Burgos, and Biscay: the inhabitants of Arragon, Catalonia, and Navarre, though they might have made a considerable stand against the enemy, chose for the most part to retire into France.

*History of Spain to the erection of the kingdoms of Castile, Leon, &c.*—In 718, however, the power of the Goths began again to revive under Pelagio or Pelayo, a prince of the royal blood, who headed those that had retired to the mountains after the fatal battle of Xeres. The place where he first laid the foundation of his government was in the Asturias, in the province of Liebana, about twenty-seven miles in length and twelve in breadth. This is the most inland part of the country, full of mountains enormously high, and

so much fortified by nature that its inhabitants are capable of resisting almost any number of invaders. Alakor, the Saracen governor, was no sooner informed of this revival of the Gothic kingdom than he sent a powerful army, under the command of one Alhaman, to crush Pelagio before he had time to establish his power. The king, though his forces were sufficiently numerous (every one of his subjects arrived at man's estate being a soldier), did not think proper to venture a general engagement in the open field; but, taking post with part of them himself in a cavern in a very high mountain, he concealed the rest among precipices, giving orders to them to fall upon the enemy as soon as they should perceive him attacked by them. These orders were punctually executed, though indeed Pelagio himself had repulsed his enemies. The slaughter was dreadful; for the troops who lay in ambuscade joining the rest, and rolling down huge stones from the mountains upon the Moors (the name by which the Saracens were known in Spain), no fewer than 124,000 of these unhappy people perished in one day. The remainder fled till they were stopped by a river, and, beginning to coast it, part of a mountain suddenly fell down, stopped up the channel of the river, and either crushed or drowned, by the sudden rising of the water, almost every one of that vast army. The Moors were not so much disheartened by this disaster but that they made a second attempt against Pelagio. Their success was as bad as ever, the greatest part of their army being cut in pieces or taken; in consequence of which they lost all the Asturias, and never dared to enter the lists with Pelagio afterwards. Indeed, their bad success had in a great measure taken from them the desire of conquering a country where little or nothing was to be got; and therefore they rather directed their force against France, where they hoped for more plunder. Into this country they poured in prodigious multitudes; but were utterly defeated in 732, by Charles Martel, with the loss of 300,000 men, as the historians of those times affirm.

Pelagio died in 737, and soon after his death such intestine divisions broke out among the Moors as greatly favored the increase of the Christian power. In 745 Alphonso the Catholic, son-in-law to Pelagio, in conjunction with his brother Froila, passed the mountains, and fell upon the northern part of Galicia; and, meeting with little resistance, he recovered almost the whole of that province in a single campaign. Next year he invaded the plains of Leon and Castile; and, before the Moors could assemble any force to oppose him, he reduced Astorgas, Leon, Saldagna, Montes de Oca, Amaya, Alava, and all the country at the foot of the mountains. The year following he pushed his conquests as far as the borders of Portugal, and the next campaign ravaged the country as far as Castile. Being sensible, however, that he was yet unable to defend the flat country which he had conquered, he laid the whole of it waste, obliged the Christians to retire to the mountains, and carried off all the Moors for slaves. Thus secured, by a desert frontier, he met with no interruption for some years; during which time, as his kingdom

advanced in strength, he allowed his subjects gradually to occupy part of the flat country, and to rebuild Leon and Astorgas, which he had demolished. He died in 757, and was succeeded by his son Froila. In his time Abdelrahman, the caliph's viceroy in Spain, threw off the yoke, and rendered himself independent, fixing the seat of his government at Cordova. See Cordova. Thus the intestine divisions among the Moors were composed; yet their success seems to have been little better than before; for, soon after, Froila encountered the Moors with such success that 54,000 of them were killed on the spot, and their general taken prisoner. Soon after he built the city of Oviedo, which he made the capital of his dominions, to be in a better condition to defend the flat country, which he now determined to people. In the year 758 the power of the Saracens received another blow by the rise of the kingdom of Navarre. This kingdom took its origin from an accidental meeting of gentlemen, to the number of 600, at the tomb of a hermit named John, who had died among the Pyrenees. At this place, where they had met on account of the supposed sanctity of the deceased, they took occasion to converse on the cruelty of the Moors, the miseries to which the country was exposed, and the glory that would result from throwing off their yoke; which, they supposed, might easily be done, by reason of the strength of their country. On mature deliberation, the project was approved; one Don Garcia Ximenes was appointed king, as being of illustrious birth, and looked upon as a person of great abilities. He recovered Ainsa, one of the principal towns of the country, out of the hands of the infidels; and his successor Garcias Inigas extended his territories as far as Biscay; however, the Moors still possessed Portugal, Mercia, Andalusia, Valentia, Granada, Tortosa, and the interior part of the country as far as the mountains of Castile and Saragossa. Their internal dissensions, which revived after the death of Abdelrahman, contributed greatly to reduce the power of the infidels in general. In 778 Charles the Great, being invited by some discontented Moorish governors, entered Spain with two great armies; one passing through Catalonia, and the other through Navarre, where he pushed his conquests as far as the Ebro.

On his return he was attacked and defeated by the Moors; but this did not hinder him from keeping possession of all those places he had already reduced. At this time he seems to have been master of Navarre; however, in 831 count Azner, revolting from Pepin son to the emperor Louis, again revived the independency of Navarre; but the sovereigns did not assume the title of kings till the time of king Garcia, who began to reign in 857. In the mean time the kingdom founded by Pelagio, now called the kingdom of Leon and Oviedo, continued to increase rapidly in strength: and altogether it had two enemies to contend with, many advantages were gained over the Moors, who lost ground every day. In 921, however, they gained a great victory over the united forces of Navarre and Leon, by which the whole force of the Christians in Spain must have been entirely broken, had not

the victors conducted their affairs so wretchedly that they suffered themselves to be almost entirely cut to pieces by the remains of the Christian army. In short, the Christians became at length so terrible to the Moors that it is probable they could not long have kept their footing in Spain, had not a great general, named Mohammed Ebn Amir Almanzor, appeared, in 979, to support their sinking cause. This man was vizier to the king of Cordova, and being exceedingly provoked against the Christians, on account of what his countrymen had suffered from them, made war with the most implacable fury. He took the city of Leon, murdered the inhabitants, and reduced the houses to ashes. Barcelona shared the same fate; Castile was reduced to desert; Galicia and Portugal ravaged; and he is said to have overcome the Christians in fifty different engagements. At last, having taken and demolished the city of Compostella, and carried off in triumph the gates of the church of St. James, a flux happened to break out among his troops, which the superstitious Christians supposed to be a divine judgment on account of his sacrilege. Taking it for granted, therefore, that the Moors were now entirely destitute of all heavenly aid, they fell upon them with such fury in the next engagement that all the valor and conduct of Almanzor could not prevent a defeat. Overcome with shame and despair, at this misfortune, he desired his followers to shift for themselves, while he himself retired to Medina Celi, and put an end to his life by abstinence in 998.

*From the erection of the kingdoms of Leon, Castile, and Arragon, to the death of Peter the Cruel.*—During this period a new Christian principality appeared in Spain, namely that of Castile, which is now divided into Old and New Castile. Old Castile was recovered long before that called the New. It was separated from the kingdom of Leon on one side by some little rivers; on the other it was bounded by the Asturias, Biscay, and the province of Rioja; on the south it had the mountains of Segovia and Avila; thus lying in the middle between the Christian kingdom of Leon and Oviedo, and the Moorish kingdom of Cordova. Hence this district soon became an object of contention between the kings of Leon and those of Cordova; and, as the former were generally victorious, some of the principal Castilian nobility retained their independency under the protection of the Christian kings, even when the power of the Moors was at its greatest height. In 884 we first hear of Rodriguez or Roderic assuming the title of count of Castile, though it does not appear that either his territory or title were given him by the king of Leon. Nevertheless, this monarch having taken upon him to punish some of the Castilian lords as rebels, the inhabitants made a formal renunciation of their allegiance, and set up a new kind of government. The supreme power was now vested in two persons of quality styled judges; however, this method did not long continue to give satisfaction, and the sovereignty was once more vested in a single person. By degrees Castile fell entirely under the power of the kings of Leon and Oviedo; and, in 1033, Sanchez bestowed it on his eldest son Ferdinand,

with the title of king; and thus the territories of Castile were first firmly united to those of Leon and Oviedo, and the sovereigns were thenceforth styled kings of Leon and Castile. Not long after this a third Christian kingdom was set up in Spain, about the beginning of the eleventh century, viz. the kingdom of Arragon. The inhabitants were very brave, and lovers of liberty, so that it is probable they had in some degree maintained their independency, even when the power of the Moors was greatest. The history of Arragon, however, during its infancy, is much less known, than that of any of the others. We only know that, about the year 1035, Sanchez, surnamed the Great, king of Navarre, erected Arragon into a kingdom in favor of his son Ramirez, and afterwards it became very powerful. At this time, then, we may imagine the continent of Spain divided into two unequal parts by a straight line drawn from east to west from the coasts of Valencia to a little below the mouth of the Duro. The country north of this belonged to the Christians, who, as yet, had the smallest and least valuable share, and all the rest to the Moors. In point of wealth and real power, both by land and sea, the Moors were greatly superior; but their continual dissensions greatly weakened them, and every day facilitated the progress of the Christians. Indeed, had either of the parties been united, the other must soon have yielded; for, though the Christians did not make war upon each other constantly as the Moors did, their mutual feuds were yet sufficient to have ruined them, had their adversaries made the least use of the advantages thus afforded them. But among the Moors almost every city was a kingdom; and, as these petty sovereignties supported one another very indifferently, they fell a prey one after another to their enemies.

In 1080 the king of Toledo was engaged in a war with the king of Seville, another Moorish potentate; which being observed by Alphonso, king of Castile, he also invaded his territories; and in four years made himself master of the city of Toledo, with all the places of importance in its neighbourhood; thenceforth making Toledo the capital of his dominions. In a short time the whole province of New Castile submitted; and Madrid, now the capital of Spain, fell into the hands of the Christians, being then but a small place. The Moors were so much alarmed at these conquests that they not only entered into a general confederacy against the Christians, but invited to their assistance Mahomet Ben Joseph the sovereign of Barbary. He accordingly came, attended by an incredible multitude; but was utterly defeated by the Christians in the defiles of the Black Mountain, or Sierra Morena, on the borders of Andalusia. This victory happened on the 16th July 1212, and the anniversary is still celebrated at Toledo. But it was not improved; the Christian army immediately dispersed themselves, while the Moors of Andalusia were strengthened by the remains of the African army; yet, instead of being taught by their past misfortunes, to unite themselves, their dissensions became worse than ever, and the conquests of the Christians became daily more

rapid. In 1236 Ferdinand of Castile and Leon took the celebrated city of Cordova, the residence of the first Moorish kings; at the same time that James I. king of Arragon dispossessed them of the island of Majorca, and drove them out of Valencia. Two years after, Ferdinand made himself master of Murcia, and took the city of Seville; and in 1303 Ferdinand IV. reduced Gibraltar.

In the time of Edward III. we find England, for the first time, interfering in the affairs of Spain on the following occasion. In 1284 the kingdom of Navarre had been united to that of France by the marriage of Joanna queen of Navarre with Philip the Fair of France. In 1328, however, the kingdoms were again separated, though the sovereigns of Navarre were still related to those of France. In 1350 Charles, surnamed the Wicked, ascended the throne of Navarre, and married the daughter of John king of France. Notwithstanding this alliance, and that he himself was related to the royal family of France, he secretly entered into a negotiation with England against the French monarch, and even drew into his schemes the dauphin Charles, afterwards surnamed the Wise. The young prince, however, was soon after made fully sensible of the danger and folly of the connexions into which he had entered; and, by way of atonement, promised to sacrifice his associates. Accordingly he invited the king of Navarre, and some of the principal nobility of the same party, to a feast at Rouen, where he betrayed them to his father. The most obnoxious were executed, and the king of Navarre was thrown into prison. In this extremity, the party of the king of Navarre had recourse to England. The prince of Wales, surnamed the Black Prince, invaded France, defeated king John at Poictiers, and took him prisoner (See FRANCE), which unfortunate event produced the most violent disturbances in that kingdom. The dauphin, now about nineteen years of age, assumed the royal power during his father's captivity: but possessed neither experience nor authority sufficient to remedy the prevailing evils. To obtain supplies, he assembled the states of the kingdom: but that assembly, instead of supporting his administration, laid hold of the opportunity to demand limitations of the prince's power, the punishment of past malversations, and the liberty of the king of Navarre. Marcel, provost of the merchants at Paris, and first magistrate of that city, put himself at the head of the unruly populace, and pushed them to commit the most criminal outrages against the royal authority. They detained the dauphin in a kind of captivity, murdered in his presence Robert de Clermont and John de Conflans, mareschals of France; threatened all the other ministers with the like fate; and when Charles, who had been obliged to temporize and dissemble, made his escape from their hands, they levied war against him, and openly rebelled. The other cities of the kingdom, in imitation of the capital, shook off the dauphin's authority, took the government into their own hands, and spread the contagion into every province. Amidst these disorders the king of Navarre

made his escape from prison, and presented a dangerous leader to the furious malecontents. He revived his pretensions to the crown of France; but in all his operations he acted more like a leader of banditti than one who aspired to be the head of a regular government, and who was engaged by his station to endeavour the re-establishment of order in the community. All the French, therefore, who wished to restore peace to their country, turned their eyes towards the dauphin; who, though not remarkable for his military talents, daily gained by his prudence and vigilance the ascendant over his enemies. Marcel, the seditious provost of Paris, was slain in attempting to deliver that city to the king of Navarre. The capital immediately returned to its duty: the most considerable bodies of the mutinous peasants were dispersed or put to the sword; some bands of military robbers underwent the same fate; and France began once more to assume the appearance of civil government. John died in England, and was succeeded in the throne of France by his son Charles V., a prince educated in the school of adversity, and well qualified, by his prudence and experience, to repair the losses which the kingdom had sustained from the errors of his predecessors. Contrary to the practice of all the great princes of those times, who held nothing in estimation but military courage, he seems to have laid it down as a maxim never to appear at the head of his armies; and he was the first European monarch that showed the advantage of policy and foresight over a rash and precipitate valor. Before Charles could think of counterbalancing so great a power as England, it was necessary for him to remedy the many disorders to which his own kingdom was exposed. He accordingly turned his arms against the king of Navarre, the great disturber of France during that age: and he defeated that prince, and reduced him to terms, by the valor and conduct of Bertrand du Guesclin, one of the most accomplished captains of those times, whom Charles had the discernment to choose as the instrument of his victories. He also settled the affairs of Brittany by acknowledging the title of Mountfort, and receiving homage for his dominions. On the conclusion of the peace of Bretigny, the many military adventurers who had followed the fortunes of Edward, being dispersed into the several provinces, and possessed of strong holds, refused to lay down their arms, or relinquish a course of life to which they were now accustomed, and by which alone they could earn a subsistence. They associated themselves with the banditti, who were already inured to the habits of rapine and violence; and, under the name of companies and companions, became a terror to all the peaceable inhabitants. Some English and Gascon gentlemen of character were not ashamed to take the command of these ruffians, whose number amounted to nearly 40,000, and who bore the appearance of regular armies rather than bands of robbers. As Charles was not able by power to redress so enormous a grievance, he was led by necessity, as well as by the turn of his character, to correct it by policy; to discover some method of discharging into

foreign countries this dangerous and intestine evil ; and an occasion now offered. Alphonso XI. king of Castile, who took the city of Algerira from the Moors, after a famous siege of two years, during which artillery are said first to have been used by the besieged, had been succeeded by his son Peter I. surnamed the Cruel ; a prince equally perfidious, debauched, and bloody. He began his reign with the murder of his father's mistress Leonora de Gusman : his nobles fell every day the victims of his severity : he put to death his cousin and one of his natural brothers, from groundless jealousy ; and he caused his queen Blanche de Bourbon, of the blood of France, to be thrown into prison, and afterwards poisoned, that he might enjoy Mary de Padella, with whom he was violently enamoured. Henry count of Trastamara, the king's natural brother, alarmed at the fate of his family, and dreading his own, took arms against the tyrant ; but, having failed in the attempt, he fled to France, where he found the minds of men much inflamed against Peter, on account of the murder of the French princess. He asked permission of Charles to enlist the companies in his service, and to lead them into Castile against his brother. The French king, charmed with the project, employed du Guesclin in negotiating with the leaders of these banditti. The treaty was soon concluded ; and du Guesclin, having completed his levies, led the army first to Avignon, where the pope then resided, and demanded, sword in hand, absolution for his ruffian soldiers, who had been excommunicated, and the sum of 200,000 livres for their subsistence. The first was readily promised him ; but, some difficulty being made with regard to the second, du Guesclin replied, ' My fellows may make a shift to do without your absolution, but the money is absolutely necessary.' His holiness then extorted from the inhabitants of the city and its neighbourhood the sum of 100,000 livres, and offered it to du Guesclin. ' It is not my purpose,' cried that generous warrior, ' to oppress the innocent people. The pope and his cardinals can spare me double the sum from their own pockets. I therefore insist that this money be restored to the owners : and, if I hear they are defrauded of it, I will myself return from the other side of the Pyrenees, and oblige you to make them restitution.' The pope found the necessity of submitting, and paid from his own treasury the sum demanded. A body of experienced and hardy soldiers, conducted by so able a general, easily prevailed over the king of Castile, whose subjects were ready to join the enemy against their oppressor. Peter fled from his dominions, took shelter in Guienne, and craved the protection of the prince of Wales, whom his father had invested with the sovereignty of the ceded provinces, under the title of the principality of Aquitaine. The prince promised his assistance to the dethroned monarch ; and, having obtained his father's consent, he levied an army, and set out on his enterprise. The first loss which Henry of Trastamara suffered from the interposition of the prince of Wales, was the recalling of the companies from his service ; and so much reverence did they pay to

the name of Edward, that great numbers of them immediately withdrew from Spain, and enlisted under his standard. Henry, however, beloved by his new subjects, and supported by the king of Arragon, was able to meet the enemy with an army of 100,000 men, three times the number of those commanded by the Black Prince : yet du Guesclin, and all his experienced officers, advised him to delay a decisive action ; so high was their opinion of the valor and conduct of the English hero. But Henry, trusting to his numbers, ventured to give Edward battle on the banks of the Ebro, between Najara and Navarrete ; where the French and Spaniards were defeated, with the loss of above 20,000 men, and du Guesclin and other officers of distinction taken prisoners. All Castile submitted to the victor ; Peter was restored to the throne, and Edward returned to Guienne with his usual glory ; having not only overcome the greatest general of his age, but restrained a blood-thirsty tyrant from executing vengeance on his prisoners. This gallant warrior had soon reason to repent of his connexions with a man like Peter, lost to all sense of virtue and honor. The ungrateful monster refused the stipulated pay to the English forces. Edward abandoned him : he treated his subjects with the utmost barbarity ; their animosity was roused against him ; and du Guesclin, having obtained his ransom, returned to Castile with the count of Trastamara, and some forces levied anew in France. They were joined by the Spanish malecontents ; and, having no longer the Black Prince to encounter, they gained a complete victory over Peter in the neighbourhood of Toledo. The tyrant now took refuge in a castle, where he was soon after besieged by the victors, and taken prisoner in endeavouring to make his escape. He was conducted to his brother Henry ; against whom he is said to have rushed in a transport of rage, disarmed as he was. Henry slew him with his own hand, in resentment of his cruelties ; and, though a bastard, was himself placed on the throne of Castile, which he transmitted to his posterity.

*From the death of Peter to that of Ferdinand V. and Isabella.*—After the death of Peter the Cruel, nothing remarkable happened in Spain for almost a whole century ; but the debaucheries of Henry IV. of Castile roused the resentment of his nobles, and produced a most singular insurrection, which led to the aggrandisement of the Spanish monarchy. This prince, surnamed the Impotent, was continually surrounded with women : he began his unhappy reign in 1454, totally enervated by his pleasures ; and every thing in his court conspired to set the Castilians an example of the most abject flattery and abandoned licentiousness. The queen, a daughter of Portugal, lived as openly with her paramours and her gallants as the king did with his minions and his mistresses. Pleasure was the only object, and effeminacy the only recommendation to favor : the affairs of the state went every day into disorder ; till the nobility, with the archbishop of Toledo at their head, combining against the weak and flagitious administration of Henry, arrogated to themselves, as one of the privileges

of their order, the right of trying and passing sentence on their sovereign, which they executed in a manner unprecedented in history. All the malecontent nobility were summoned to meet at Avila; a spacious theatre was erected in a plain without the walls of the town; an image, representing the king, was seated on a throne, clad with royal robes, with a crown on its head, a sceptre in its hand, and the sword of justice by its side. The accusation against Henry was read, and the sentence of deposition pronounced in the presence of a numerous assembly. At the close of the first article of the charge, the archbishop of Toledo advanced and tore the crown from the head of the image; at the close of the second, the count of Placentia snatched the sword of justice from its side; at the close of the third, the count of Benavente wrested the sceptre from its hand; and at the close of the last Don Diego Lopez de Stuniga tumbled it headlong from the throne. At the same instant, Don Alphonso, Henry's brother, a boy of about twelve years of age, was proclaimed king of Castile and Leon in his stead. This extraordinary proceeding was followed by a civil war, which did not cease till some time after the death of the young prince, on whom the nobles had then bestowed the kingdom. The archbishop and his party then continued to carry on war in the name of Isabella, the king's sister, to whom they gave the title of Infanta; and Henry could not extricate himself out of these troubles, nor remain quiet upon his throne, till he had signed one of the most humiliating treaties ever extorted from a sovereign. He acknowledged his sister Isabella the only lawful heiress of his kingdom, in prejudice to the rights of his reputed daughter Joan, whom the malecontents affirmed to be the offspring of an adulterous commerce between the queen and Don la Cueva. The grand object of the malecontent party now was the marriage of the princess Isabella, upon which, it was evident, the security of the crown and the happiness of the people must in a great measure depend. The alliance was sought by several princes: the king of Portugal offered her his hand; the king of France demanded her for his brother, and the king of Arragon for his son Ferdinand. The malecontents very wisely preferred the Arragonian prince, and Isabella made the same choice; articles were drawn up: and they were privately married by the archbishop of Toledo. Henry was enraged at this alliance, which he foresaw would utterly ruin his authority, by furnishing his rebellious subjects with the support of a powerful neighbouring prince. He disinherited his sister and established the rights of his daughter. A furious civil war ensued. The names of Joan and Isabella resounded from every quarter, and were every where the summons to arms. But peace was at length brought about. Henry was reconciled to his sister and Ferdinand; though it does not appear that he even recognised Isabella's right to the succession; for he affirmed, to his last moments, that he believed Joan to be his own daughter. The queen swore to the same effect; and Henry left a testamentary deed, transmitting the crown to this princess, who was proclaimed queen of Castile at Placentia. But

the superior fortune and arms of Ferdinand and Isabella prevailed: the king of Portugal was obliged to abandon his niece and intended bride, after many ineffectual struggles and several years of war. Joan retired into a convent; and the death of Ferdinand's father, which happened about this time, added the kingdoms of Arragon and Sicily to those of Leon and Castile.

Ferdinand and Isabella conducted themselves with great prudence, and were, as sovereigns, highly worthy of imitation; but they do not seem to have merited all the praises bestowed upon them by the Spanish historians. They are said to have lived rather like two princes in close alliance than as man and wife; they neither loved nor hated each other; were seldom in each other's company; had each a separate council, and were frequently jealous of one another in the administration. But they were inseparably united in their common interests; acting upon the same principles, and forwarding the same ends. Their first object was the regulation of their government, which the civil wars had thrown into the greatest disorder. Rapine, outrage, and murder, were become so common, as not only to interrupt commerce, but in a great measure to suspend all intercourse between one place and another. These evils the joint sovereigns suppressed by their wise policy, at the same time that they extended the royal prerogative. About the middle of the thirteenth century the cities in the kingdom of Arragon, and after their example those in Castile, had formed themselves into an association named the Holy Brotherhood. They exacted a certain contribution from each of the associated towns; levied a considerable body of troops, to protect travellers and pursue criminals; and appointed judges, who opened courts in various parts of the kingdom. Whoever was guilty of murder, robbery, or any act that violated the public peace, and was seized by the troops of the brotherhood, was carried before their judges; who, without paying any regard to the exclusive jurisdiction which the lord of the place might claim (generally the author or abettor of the injustice), tried and condemned the criminals. The nobles often murmured against this salutary institution; they complained of it as an encroachment on one of their most valuable privileges, and endeavoured to get it abolished. But Ferdinand and Isabella, sensible of the beneficial effects of the brotherhood, not only in regard to the police of their kingdom, but in its tendency to abridge, and by degrees annihilate, the territorial jurisdiction of the nobility, countenanced the institution upon every occasion, and supported it with the whole force of royal authority; by which means the prompt and impartial administration of justice was restored, and with it tranquillity and order. But, at the same time that their Catholic majesties (for such was the title they now bore) were giving vigor to their civil government, and securing their subjects from violence and oppression, an intemperate zeal led them to establish an ecclesiastical tribunal, equally contrary to the natural rights of humanity and the mild spirit of the gospel. This was the court of inquisition; which decided upon the honor, fortune, and even the life, of the unhappy wretch

who happens to fall under the suspicion of heresy, or a contempt of any thing prescribed by the church, without his being confronted with his accusers, or permitted either defence or appeal : 6000 persons were burnt by order of this sanguinary tribunal within four years after the appointment of Torquemada, the first inquisitor-general ; and upwards of 100,000 felt its fury. The same furious and blinded zeal which led to the depopulation of Spain led also to its aggrandisement. The kingdom of Granada now alone remained of all the Mahometan possessions in Spain. Princes equally zealous and ambitious were naturally disposed to turn their eyes to that fertile territory, and to think of increasing their hereditary dominions, by expelling the enemies of Christianity, and extending its doctrines. Every thing conspired to favor their project : the Moorish kingdom was a prey to civil wars ; when Ferdinand, having obtained the bull of Sixtus IV., authorising a crusade, put himself at the head of his troops, and entered Granada. He continued the war with rapid success : Isabella attended him in several expeditions ; and they were both in great danger at the siege of Malaga, an important city, which was defended with great courage and taken in 1487. Baza was reduced in 1489, after the loss of 20,000 men. Guadix and Almeria were delivered up to them by the Moorish king Alzagel, who had first deposed his brother Alboacen, and afterwards been chased from his capital by his nephew Abdali. That prince engaged in the service of Ferdinand and Isabella ; who, after reducing every other place of eminence, undertook the siege of Granada. Abdali made a gallant defence ; but all communication with the country being cut off, and all hopes of relief at an end, he capitulated, after a siege of eight months, on condition that he should enjoy the revenue of certain places in the fertile mountains of Alpujarros ; that the inhabitants should retain the undisturbed possession of their houses, goods, and inheritances, the use of their laws, and the free exercise of their religion. Thus ended the empire of the Arabs, Moors, or Saracens, in Spain, after it had continued about 800 years. They introduced the arts and sciences into Europe at a time when it was lost in darkness ; they possessed many of the luxuries of life, when they were not even known among the neighbouring nations ; and they seem to have given birth to that romantic gallantry which so eminently prevailed in the ages of chivalry, and which, blending itself with the veneration of the northern nations for the softer sex, still particularly distinguishes modern from ancient manners. But the Moors, notwithstanding these advantages, and the eulogies bestowed upon them by some writers, appear always to have been destitute of the essential qualities of a polished people, humanity, generosity, and mutual sympathy.

Mr. Jacob, a writer of whose illustrations of Spanish history, in his Letters from Spain, we have before availed ourselves, gives an able summary of the rise, progress, and permanent efforts of the Moorish dominion in that country. He gives that luminous and interesting account, in particular, of the kingdom of Granada, and its subjugation by Ferdinand, which will justify a considerable extract.

'The family of Almanzor still continued to reign in Granada, in the year 1051, when Joseph Ben Taschphen, king of Morocco, invaded Granada with an irresistible army. The timid successor of Almanzor, though strengthened by auxiliaries from the Christian king of Castile, feared to meet him in battle ; and, when his enemy advanced towards the city, he went forth to receive him, and, surrendering his power, followed, with his nobles, in the train of the African invader, who was thus quietly seated on the throne, which he afterwards filled with dignity and splendor. The death of Joseph occasioned a civil war in Granada, which was succeeded by a truce, in which the different pretenders to the sovereignty agreed to divide the kingdom, which, however, became again united in 1146, by the establishment of a prince of the family of the Almohades in the sole possession of the supreme power. This family continued on the throne till 1232, when Mahomet I., one of the greatest of the Moorish princes, laid the foundation of a new dynasty, the talents and virtues of which raised the kingdom to its highest degree of prosperity. Mahomet, though he always kept up a powerful army, was no less attentive to the arts of peace. He regulated the revenues, administered justice, cultivated science, endowed hospitals, and began the Alhambra, a fortress which was ever afterwards considered the glory of Mahometan Spain.

'The first part of his reign was undisturbed by war ; but, Ferdinand of Castile having succeeded in taking Cordova, he feared for the safety of his dominions, and endeavoured to strengthen himself by an alliance with Benudiel king of Murcia, who, having declined his offered friendship, was under the necessity of ceding his dominions to the Christian king, to avoid their being conquered by this Mahometan prince. Ferdinand, having thus obtained possession of Murcia, turned his arms against the kingdom of Granada. Mahomet fought the battle of Martos with the commander of Calatrava ; but, though victorious, was threatened with such overwhelming forces, that he yielded to Ferdinand, paid tribute for his dominions, and assisted with his troops at the capture of Seville, in the character of a vassal to the Christian chief. The death of Ferdinand produced civil wars, in Castile, among the subjects of his son Alphonso, and Mahomet availed himself of the opportunity to throw off the yoke he had unwillingly borne, and, forming alliances with other Moorish chieftains, defeated the army of Alphonso at Alcala la Real. With the assistance of 10,000 horse from Morocco, he invested the cities of Guadix and Malaga, which were under the protection of the kingdom of Castile ; and, after a long siege, took the latter by storm, in 1273, when his reign and his life were terminated by the fatigues of war.

'Mahomet II. succeeded his father, and has left a higher character than any of the monarchs of his race. The commencement of his reign was disturbed by domestic factions, which, by his firmness and wisdom, he either subdued or conciliated. He was the patron of arts and of commerce, and the protector of science. His court was the resort of astronomers, physicians,

philosophers, orators, and poets; and his own compositions in verse are celebrated by the Arabs for their wit and epigrammatic humor. He renewed the alliance with the king of Castile; but, Alphonso having passed to Italy, he took advantage of his absence, and formed a treaty with the king of Morocco, who sent him an army of 17,000 men, by the aid of which he defeated the Christian forces, enlarged his dominions by the capture of Jaen, and finally concluded a treaty of peace, in which the Christians renounced their claim of vassalage, agreed to defray the expenses of the war, and surrendered to the Moors Tarifa and Algeziras. His son, of the same name, succeeded to the throne in 1302, and resembled him in his love of literature, and his patronage of the fine arts; but, being engaged in a war with the king of Arragon, discontents were fomented in the capital; and, when he returned, an insurrection broke out, which transferred the crown to Almasser his brother, who, though only twenty-five years of age, was celebrated for his progress in mathematics, his knowledge of astronomy, and his skill in making astronomical tables and instruments with the greatest accuracy: as he was, however, unfit for the turbulent period in which he lived, he yielded to the seditious disposition of his subjects, who were aided by Ismael prince of Malaga, and in 1314 withdrew from the throne to a life of literary retirement, while the more warlike Ismael succeeded to that dignity which the mild virtues of Almasser rendered him unfit to maintain.

'Were I to name the various kings who in succession ruled the kingdom of Granada, I should I fear exhaust your patience; and I have only been induced to mention these few because their reigns were marked by a love of science which gave a character to their territory materially different from that which it had before possessed.'

'Granada, sometimes at variance, sometimes in alliance with Castile and with Arragon, sometimes receiving succors from, and sometimes sending invading armies to Barbary, was itself torn by those intestine commotions which are frequently the cause and are always the fore-runners of the dissolution of states. The last war of Granada was begun in 1482 by Albohasen, who, instigated by the discontents in Castile, which the accession of Ferdinand and Isabella had created, marched an army of 40,000 men to attack their dominions. Ferdinand proposed a truce for three years, which was accepted. During this period, having quieted his rebellious subjects, he directed his forces against Albohasen. He commenced his operations by capturing Alhama, which gave a decisive blow to the Moorish power, since, by the fall of this place, the Christians became masters of an impregnable fortress in the heart of the enemy's dominions, and were thence enabled to excite murmurs and dissensions among the different parties in the capital. Amid various scenes of internal division, Albohasen, who had provoked the hostility of Castile, forfeited the respect of his subjects, by a blind attachment to a Christian captive, for whose sake he divorced his

wife, and caused her sons to be executed. He was, in consequence, deposed, and Abo Abdeli, his eldest son, who alone escaped from the slaughter, was raised by the people to the throne of his father.

Ferdinand in the mean time advanced towards the city, and Abo Abdeli, in a battle near Lucina, was defeated, and made prisoner. During his captivity he entered into a treaty with his conqueror, which restored him to his liberty, but his people, being animated with fury at the disgraceful terms to which he had acceded, drove him from the throne, and Albohasen was again elevated to the sovereignty for a few months, when his brother, Muly el Zagal, was enabled, by the fickle populace, to dethrone him, and assume the sceptre. The policy of Ferdinand induced him to support the interests of the exiled Abo Abdeli, and to foment those divisions between the rival monarchs which favored and opened his way to the final reduction of Granada. A short alliance was, indeed, formed between the Moorish kings, by the preaching of a celebrated fakeer of the house of Abencerraxe, to whose warning the people listened as to the voice of inspiration: he proclaimed, in the name of God and his prophet, the approaching ruin of the Mahometan faith, unless the two competitors should unite in its support. His eloquence produced a transient effect, but the jealousy of the rivals soon revived. About this time Ferdinand captured Velez, and besieged Malaga; which last city, after a desperate defence, submitted, in 1487, to his arms, while Muley, who was advancing to its relief, was defeated by Abo Abdeli. Indeed, such was the mutual animosity of these near relatives, that Muley agreed to a treaty with Ferdinand, by which he ceded his strong towns of Guadix and Almeria, and retired to privacy, in the mountains of Alpujarras, solely with the view that the whole force of the Christians might be directed against his rival.

Abo Abdeli, reduced to the city and the plain of Granada, was at the mercy of the Castilian conqueror; but the extent and strength of the place promised a long and obstinate resistance, and Ferdinand, with an army of 70,000 men, was unable to invest it. Resolved, however, to conquer this last refuge of the Mahometans, he occupied the surrounding country with his troops, built the city of Santa-fee within two leagues of it, and drew thither the commerce and supplies, which had previously centered in Granada. At this period, while its inhabitants were sunk in indolence, one of those men, whose natural and impassioned eloquence has sometimes aroused a people to deeds of heroism, raised his voice, in the midst of the city, and awakened the inhabitants from their lethargy: 20,000 enthusiasts, ranged under his banners, were prepared to sally forth, with the fury of desperation, to attack the besiegers, when Abo Abdeli, more afraid of his subjects than of the enemy, resolved immediately to capitulate, and made terms with the Christians, by which it was agreed that the Moors should be allowed the free exercise of their religion and laws; should be permitted, if they thought proper, to

depart, unmolested, with their effects to Africa ; and that he himself, if he remained in Spain, should retain an extensive estate, with houses and slaves, or be granted an equivalent in money, if he preferred retiring to Barbary.

‘ Thus, after eight centuries, the power of the Mahometans was terminated in Spain. Abo Abdeli, the last of their chiefs, after bending the knee to the king of Castile, and kissing his hand as a token of submission, retired to his domain, loaded with the hatred and the curses of the people, and the execrations of his own family ; while the remnant of the nation, after submitting to the Christians, was, in defiance of every principle of good faith and enlightened policy, finally banished to the sterile and sultry regions of their ancestors. I refrain, with some difficulty, from narrating the wars which succeeded the conquest of Granada, and the heroism displayed by the Moors, who were scattered in the mountains ; the eloquence of their chiefs, their sufferings, and their constancy, would be a theme upon which the interesting scenes around me might lead me to dwell with enthusiasm, but which I fear you would not feel with equal interest. I shall therefore present to your view some account of that period when Christendom, sunk under papal dominion, destitute of science, and deprived of the knowledge of the Grecian and Roman authors, was in a state of mental barbarism, and the successors of the Arabian prophet preserved, within the narrow confines of the little kingdom of Granada, the only remaining portion of the light of knowledge.

‘ That contempt of knowledge which was the natural effect of the warlike pursuits of Mahomet and his immediate successors, and which produced the destruction of the treasures of antiquity in the library of Alexandria, continued till the accession of Almamon, the seventh caliph of the race of Abassides, who sent agents through Armenia, Syria, and Egypt, to collect the scientific writings of Greece. These he caused to be translated into the Arabic language, and recommended them to the study of his subjects. His successors were equally inclined to promote the advancement of knowledge, and were rivalled in this respect by the Fatimites of Africa, and the Omniaedes of Spain. Thus the love of literature became extended to Fez, Cordova, and Granada. The Arabic writers affirm that the Omniaedes collected 600,000 volumes, and mention seventy public libraries in the different Spanish cities under the dominion of the Arabs ; in 1126 they enumerate 150 authors, natives of Cordova, fifty-two of Almeria, seventy-six of Murcia, and fifty-three of Malaga, besides those of Seville, Valencia, and Granada, whose successors, during nearly four centuries, kept alive the spirit of literature : it was, however, principally in this last city that it flourished, in which there were at that time two universities, two royal colleges, and a public library, enriched with the productions of the best Greek and Arabic writers. So general was the love of learning in Granada that it extended, notwithstanding the prohibitions of Mahomet, to the softer sex. Naschina acquired celebrity as a poetess ; Mosada as an historian ; and Leila as a mathematician and universal scholar.

‘ I shall not enter into the question how far this display of knowledge, this taste for literature, tended to soften the harsh features of the Mahometan religion, or to mollify the despotism of its government. The moderns are at least indebted to them for having preserved the writings of eminent Greek authors, whose works, when learning revived in Christian Europe, became important auxiliaries in furthering the progress of human acquirement. Physic in particular was diligently studied ; and the names of Mesna, Geber, and Avicena, may be classed with those of their Greek instructors. Such was the celebrity of the Mahometan physicians that the lives of the Catholic kings, in extreme sickness, were frequently entrusted to their care ; and Muratori gives them the credit of having founded at Salerno that school for medicine which diffused the knowledge of the healing art through Italy and the rest of Europe. They were, however, but imperfectly acquainted with anatomy, as the dissection of the human frame was forbidden, and they could only judge of its organization from the inspection of monkeys and other animals. Botany was a favorite study, and the travellers of Granada brought from Africa, Persia, and India, plants which enriched their collections. In the study of chemistry also they had made some progress : they analysed substances, observed the affinity of acids and alkalies, and drew valuable medicines from the most poisonous minerals.

‘ The sciences in which the Arabs of Granada more especially excelled were the various branches of mathematics. Astronomy was early introduced, and eagerly cultivated ; and the brilliancy of the atmosphere, the extent of the horizon, and the nature of their occupations, enabled them to make considerable proficiency in that science even at an early period. An astronomical clock, of very curious construction, was among the presents sent to Charlemagne, by an Arabian king in the year 807 ; and in a work published by Almamon, in 814, mention is made of two observations of the obliquity of the ecliptic, and the mode is described of measuring a degree of the meridian, the result of which very nearly corresponds with the more recent experiments made in Peru and Lapland. Alphonso, king of Castile, employed Arabian astronomers to instruct the professors in his dominions ; and it is probable that, from this circumstance, the terms nadir, zenith, azimuth, and many others, have been transferred from the Arabian language to all the dialects of Europe. Arithmetic, geometry, trigonometry, and optics, were sedulously studied. Although the system of numeration, which is the basis of our arithmetic, may perhaps be traced to more remote antiquity, it probably would not have been so extensively and so early adopted but for the labors of the Arabs of Granada. Algebra, though not indebted to them for its origin, was advanced very considerably by their exertions ; and a Spanish Arab, of the eleventh century, Geber Ben Aphla, is considered almost as the founder of trigonometry, by new theorems which he proposed. In those branches of mathematics which are connected with physics, the Arabs made little or no

progress, but contented themselves with servilely copying the ancients, or commenting on their errors. With all the knowledge, however, which the Arabs possessed, they were as unacquainted as their Christian contemporaries with those exquisite writings of Greece and of Rome which have handed down to us the heroic characters described in the pages of Plutarch and Livy, and which have exhibited mankind in its most elevated point of view. But, to estimate justly the rank which the kingdom of Granada held among the nations, it ought to be compared with the Christian kingdoms of the same age, and not with those which since the revival of learning, the reformation of religion, and the establishment of liberty, have so greatly increased in every species of knowledge and refinement.

What the exact numbers of the population may have been it is now difficult to ascertain; but in the year 1311 an ambassador, sent from Spain to Vienna, stated the inhabitants of the capital to amount to 200,000 Moors, besides 50,000 renegadoes, and 30,000 Christian captives. Agriculture in Granada, under the Saracens, formed the principal and most honorable occupation; and though they had not, like the Romans, the deity Stercetus, the attention paid to manure was not less than with that people: it was carefully preserved in pits that none of the salts might be lost, and was liberally spread over their fields: irrigation was carefully attended to; and the transparent streams which descended from the mountains were diverted into thousands of channels to fertilise the soil. The bigotry of Mahometanism forbade them to sell their superfluous corn to the surrounding nations; and the want of that stimulus, which the certainty of a vent produces, prevented them from carrying the cultivation of grain to any great extent. In years of abundance it was deposited in the caverns of rocks, lined with straw, the mouths of which were covered with the same material, where it was preserved for a long succession of years. On the birth of every child a cavern was filled with corn, which was destined to be his portion when arrived at maturity.

That religious prejudice which induced the Moors to neglect, in some degree, the cultivation of grain, led them to cultivate, with sedulous attention, fruits of all kinds, which seem, indeed, to have formed their principal aliment. Spain owes to this people the introduction of the infinite variety of fruits which are now considered almost as indigenous. It is equally indebted to them for the sugar-cane, the cotton-tree, and all the best horticultural productions with which the country now abounds. Though wine was forbidden, vines were cultivated to such an extent that their annual value in the vega, or plain, is estimated by a writer in the year 1296 at 14,000 golden crowns, or £8000 sterling—a prodigious sum at that day, when the fanega of wheat (nearly two bushels) sold for about one shilling. The commerce of Granada was very extensive at an early period, and the luxuries of India were brought to supply its voluptuous court from Alexandria to Malaga. The silks of India were, however, soon imitated by the Moors, and, after some practice, were even excelled. Capmany,

in his *Historical Memoirs of the Commerce of Barcelona*, quotes a letter of Navagero, a Venetian ambassador, written from Granada, in which he says, ‘They make here silks of all kinds, for which there is a great consumption in Spain; their taffeties are as good, perhaps better, than those of Italy; and their silk-serges, and velvets, are likewise of good quality.’ From the commerce with India the porcelains of China were introduced in Granada; and in this branch the Moors appear to have gone beyond their models, if we may be allowed to form a judgment from two exquisitely worked vases preserved in the palace of the Alhambra, and from the glazed tiles which form the most remarkable ornament of that magnificent edifice. It is probable that the manufacture of woollen cloths had advanced in proportion to that of silk, if we consider the quantity of fine wool which Spain produced; and it is known that a present of cloth, sent to Charles the Bald, king of France, was highly esteemed by that monarch. Cloths of cotton and of flax were commonly made and used by the people of Granada; but the manufacture in which, above all others, they excelled, was that of curing and dyeing leather, which, though now lost in Spain by the banishment of the Moors, has been carried to Fez and to England, where the names of Morocco and Cordovan are still applied to leather prepared after their mode.

The Moors of Granada made some progress in working mines of the various metals with which the mountains abound; and though no traces are left of any gold or silver mines, and their accounts of the former metal prove that it was produced by washing the sand of the river Darro; yet it is certain that iron and lead mines were worked to an extent that enabled them to export considerable quantities to the Christians of Barcelona and the Moors of Africa. Their manufactories of iron and steel were considerable; and the latter was so excellent that the swords of Granada were preferred to all others in Spain. The fine arts were very imperfectly known. The prohibition among the Mahometans to copy the human form had, no doubt, a considerable influence in preventing their attaining any excellence in either painting or sculpture; and, though their joiners and inlayers of wood worked with nicety, there is an evident want of taste in their ornaments as well as in their architectural plans. They excelled in the stucco, with which they ornamented their apartments, and displayed great and singular skill in painting and gilding them; abundant proofs of which still remain in the Alhambra.

Music was an object of study with some of the most eminent Arabs; and Avicena, the most celebrated of their literati, illustrated it by some works which are in the Escorial. The gamut was brought to them from Persia, and consisted only of seven notes, indicated by the seven words of their first numerals. No less than thirty-one musical instruments are enumerated in their writings; but, as they paid little attention to time, it is not probable that they had made much progress in the science.

The manners of the Moors in Spain were much softened by the acquirement of knowledge;

and, without losing the warlike character which introduced them into the country, they acquired a degree of gallantry, and even devotion to the fair sex, very remote from the practice of other Mahometans, which probably laid the foundation of that chivalrous spirit that once universally prevailed, and the traces of which are still to be observed in the interior of Spain. Distinctions gained in war were considered the surest passports to the affections of the fair; the gallant warrior was animated by the hopes of the applause of his mistress; and, in their tilts and tournaments, the ladies were the judges, and distributed the prizes to the bold and to the dextrous. This devotion to the sex was not destroyed by polygamy, which, though permitted by the law, was seldom practised, nor by the right of divorce, which, being mutual, gave an equality to the sexes unknown in other Mahometan countries. The ornaments of the females were girdles embroidered with gold and silver; the hair, which was long, was tied with strings of coral and amber; while necklaces of topaz, crysolite, amethyst, or emerald, encircled the bosom; their indulgence also in the most expensive perfumes was carried to a degree of extravagance bordering on insanity.

'The government of the Arabs was a military despotism, ameliorated, however, by customs and manners which made it preferable to the uncontrolled tyranny of their eastern progenitors. The throne was elective; but the reigning monarch had usually the opportunity of transmitting it to his posterity, by associating in his power a favorite son, by conciliating the leading nobles, and attaching them to the interests of his intended successor. The first functions of a new monarch were performed with pomp and ceremony, and consisted in exercising the sacred duty of administering justice in his hall of state, surrounded with his nobles, and in the presence of the people, whose acclamations of joy, or murmurs of discontent, presaged a reign of long or short duration. They had no hereditary nobility; but certain families by their wealth, their connexions, and their talents, were so powerful, that, to all effective purposes, they enjoyed the privileges, and exercised the prerogatives, of a powerful aristocracy. The revenues of the state consisted of a tenth of all the productions, and of the two taxes, which still retain the names by which they were designated under the Arabs, the Almoxarifazgo amounted to twelve and a half per cent., or one-eighth part of every commodity brought into or sent out of the kingdom, and the Alcavala was one-tenth part of the value of every species of property when it was transferred by sale. These were the ordinary sources of revenue; but in preparing for war, in erecting hospitals, colleges, or royal edifices, extraordinary contributions were levied, denominated Gabelas, which amounted to considerable sums. In Granada the only soldiers by profession were the royal Moorish guards, and a few others necessary to garrison the fortresses. On the apprehension of war the principal leaders convoked the people; and by holding out the hopes of successful plunder, and the promises of eternal felicity, they speedily filled their ranks with voluntary sol-

diers, and rendered requisitions and force unnecessary. The army was classed in tribes or families, each led by its chief, who carried the standard, while the whole was commanded by a general of the family of the prophet, who carried before them the standard of their religion. Their heavy troops were armed with pikes, swords, and shields, and their light troops with darts and arrows; but their most powerful force consisted of the numerous bodies of cavalry, with which, though apparently destitute of order, they made almost irresistible charges, and managed them with a skill and courage that rendered them dreadful to an enemy. Their shouts, when charging an enemy, were accompanied with those sounds, formerly so terrific to the Christians, 'Allah Arbar,' God the Omnipotent; upon uttering which words they would rush with the madness of enthusiasm to the charge, and bear before them every opponent. For defensive war, they erected fortresses on the heights of almost inaccessible mountains, to which they retired when repulsed, and whence, with recruited vigor, they sallied again, and became in their turn the assailants. The telegraph was used, if not with all the effect and improvements of recent date, yet with a dexterity that gave them great advantages over an enemy. Watch towers were constructed, from which signals of smoke by day and of torches by night communicated the movements of their opponents.'

The conquest of Granada was followed by the expulsion, or rather the pillage and banishment, of the Jews, who had engrossed all the wealth and commerce of Spain. The inquisition exhausted its rage against these unhappy people, many of whom pretended to embrace Christianity to preserve their property. About the same time their Catholic majesties concluded an alliance with the emperor Maximilian, and a treaty of marriage for their daughter Joan with his son Philip, archduke of Austria and sovereign of the Netherlands. About this time also the contract was concluded with Christopher Columbus for the discovery of New countries; and the counties of Roussillon and Cerdagne were agreed to be restored by Charles VIII. of France, before his expedition into Italy. The discovery of America was soon followed by extensive conquests in that quarter which tended to raise the Spanish monarchy above any other in Europe. On the death of Isabella, which happened in 1506, Philip, archduke of Austria, came to Castile to take possession of that kingdom as heir to his mother-in-law; but, he dying soon after, his son Charles I., afterwards Charles V., emperor of Germany, became heir to the crown of Spain. His father, at his death, left the king of France governor to the young prince, and Ferdinand, dying in 1516, left cardinal Ximenes sole regent of Castile till the arrival of his grandson.

*History of Spain to the inauguration of Charles V. as emperor of Germany.*—Ximenes, whose character is no less singular than illustrious, who united the abilities of a great statesman with the abject devotion of a superstitious monk, and the magnificence of a prime minister with the severity of a mendicant, maintained order and tranquillity in Spain, notwithstanding the discontents of

a turbulent and high-spirited nobility. When they disputed his right to the regency, he coolly showed them the testament of Ferdinand, and the ratification of that deed by Charles; but these not satisfying them, and arguments proving ineffectual, he led them insensibly towards a balcony, whence they had a view of a large body of troops under arms and a formidable train of artillery. ‘Behold,’ said the cardinal, ‘the powers which I have received from his Catholic majesty: by these I govern Castile, and will govern it, till the king, your master and mine, shall come to take possession of his kingdom.’ A declaration so bold and determined silenced all opposition; and Ximenes maintained his authority till the arrival of Charles in 1517. The young king was received with universal acclamations of joy; but Ximenes found little cause to rejoice. He was seized with a violent disorder, supposed to be the effect of poison; and, when he recovered, Charles, prejudiced against him by the Spanish grandees and his Flemish courtiers, slighted his advice, and allowed him every day to sink into neglect. The cardinal did not bear this treatment with his usual fortitude. He expected a more grateful return from a prince to whom he delivered a kingdom more flourishing than it had been in any former age, and authority more extensive and better established than the most illustrious of his ancestors had ever possessed. Conscious of his own integrity and merit, he could not therefore refrain from giving vent, at times, to indignation and complaint. He lamented the fate of his country, and foretold the calamities to which it would be exposed from the insolence, the rapaciousness, and the ignorance of strangers. But in the mean time he received a letter from the king, dismissing him from his councils under pretence of easing his age of that burden which he had so long and so ably sustained. This letter proved fatal to the minister; for he expired in a few hours after reading it. While Charles was taking possession of the throne of Spain, in consequence of the death of one grandfather, another was endeavouring to obtain for him the imperial crown. With this view Maximilian assembled a diet at Augsburg, where he cultivated the favor of the electors by many acts of beneficence, to engage them to choose that young prince as his successor. But Maximilian himself never having been crowned by the pope, a ceremony deemed essential in that age, as well as in the preceding, he was considered only as king of the Romans or emperor elect; and, no example occurring in history of any person being chosen successor to a king of the Romans, the Germans, always tenacious of their forms, obstinately refused to confer upon Charles a dignity for which their constitution knew no name. But, though Maximilian could not prevail upon the German electors to choose his grandson of Spain king of the Romans, he had disposed their minds in favor of that prince; and other circumstances, on the death of the emperor, conspired to the exaltation of Charles. The imperial crown had so long continued in the Austrian line that it began to be considered as hereditary in that family; and Germany, torn by religious disputes, stood in need of a powerful emperor, not only

to preserve its own internal tranquillity, but also to protect it against the victorious arms of the Turks, who, under Selim I., threatened the liberties of Europe. This fierce and rapid conqueror had already subdued the Mamelukes, and made himself master of Egypt and Syria. The power of Charles appeared necessary to oppose that of Selim. The extensive dominions of the house of Austria, which gave him an interest in the preservation of Germany; the rich sovereignty of the Netherlands and Franche Compte; the entire possession of the great and warlike kingdom of Spain, together with that of Naples and Sicily; all united to hold him up to the first dignity among Christian princes; and the new world seemed only to be called into existence, that its treasures might enable him to defend Christendom against the infidels. Such was the language of his partisans. Francis I., however, no sooner received intelligence of the death of Maximilian, than he declared himself a candidate for the empire, and with no less confidence of success than Charles. He trusted to his superior years and experience; his great reputation in arms; and it was farther urged in his favor that the impetuosity of the French cavalry, added to the firmness of the German infantry, would prove irresistible, and not only be sufficient, under a warlike emperor, to set limits to the ambition of Selim, but to break entirely the Ottoman power, and prevent it from ever becoming dangerous again to Germany. Both claims were plausible. The dominions of Francis were less extensive, but more united than those of Charles. His subjects were numerous, active, brave, lovers of glory, and lovers of their king. These were strong arguments in favor of his power, so necessary at this juncture; but he had no natural interest in the Germanic body; and the electors, hearing so much of military force on each side, became more alarmed for their own privileges than the common safety. They determined to reject both candidates, and offered the imperial crown to Frederick, surnamed the Wise, duke of Saxony. But he, undazzled by the splendor of an object courted with so much eagerness by two mighty monarchs, rejected it with a magnanimity no less singular than great. ‘In times of tranquillity,’ said Frederick, ‘we wish for an emperor who has no power to invade our liberties; times of danger demand one who is able to secure our safety. The Turkish armies, led by a warlike and victorious monarch, are now assembling: they are ready to pour in upon Germany with a violence unknown in former ages. New conjunctures call for new expedients. The imperial sceptre must be committed to some hand more powerful than mine or that of any other German prince. We possess neither dominions nor revenues, nor authority, which enable us to encounter such a formidable enemy. Recourse must be had, in this exigency, to one of the rival monarchs. Each of them can bring into the field forces sufficient for our defence. But as the king of Spain is of German extraction, as he is a member and prince of the empire by the territories which descend to him from his grandfather, and as his dominions stretch along that frontier which lies most exposed to the enemy, his claim, in my opinion, is preferable to that of a stranger’

to our language, to our blood, and to our country.' Charles was elected in consequence of this speech in 1520.

The two candidates had hitherto conducted their rivalry with emulation, but without enmity. They had even mingled in their competition many expressions of friendship and regard. Francis in particular declared, with his usual vivacity, that his brother Charles and he were fairly and openly suitors to the same mistress: 'The most assiduous and fortunate,' added he, 'will win her; and the other must rest contented.' But the preference was no sooner given to his rival than Francis discovered all the passions natural to disappointed ambition. He could not suppress his chagrin and indignation at being baulked in his favorite pursuit, and rejected, in the face of all Europe, for a youth yet unknown to fame. The spirit of Charles resented such contempt; and from this jealousy, as much as from opposition of interests, arose that emulation between those two great monarchs which involved them in almost perpetual hostilities, and kept their whole age in movement. Charles and Francis had many interfering claims in Italy; and the latter thought himself bound in honor to restore the king of Navarre to his dominions, unjustly seized by the crown of Spain. They immediately began to negotiate; and, as Henry VIII. of England was the third prince of the age in power and dignity, his friendship was eagerly courted by each of the rivals. He was the natural guardian of the liberties of Europe. Sensible of the consequence which his situation gave him, and proud of his pre-eminence, Henry knew it to be his interest to keep the balance even between the contending powers, and to restrain both, by not joining entirely with either; but he was seldom able to reduce his ideas to practice. Vanity and resentment were the great springs of all his undertakings; and his neighbours, by touching these, found an easy way to draw him into their measures, and force him upon many rash and inconsiderate enterprises. All the impolitic steps in Henry's government must not, however, be imputed to himself; many of them were occasioned by the ambition and avarice of his prime minister and favorite, cardinal Wolsey. This man, who, by his talents and accomplishments, had risen from one of the lowest conditions

life to the highest employments, both in church and state, enjoyed a greater degree of power and dignity than any English subject ever possessed, and governed the haughty, presumptuous, and untractable spirit of Henry, with absolute authority. Francis was equally well acquainted with the character of Henry and of his minister. He had successfully flattered Wolsey's pride, by honoring him with particular marks of his confidence, and bestowing upon him the appellation of father, tutor, and governor; and he had obtained the restitution of Tournay, by adding a pension to those respectful titles. He now solicited an interview with the king of England near Calais; in hopes of being able, by familiar conversation, to attach him to his friendship and interest; while he gratified the cardinal's vanity, by affording him an opportunity of displaying his magnificence in the presence of two

courts, and of discovering to the two nations his influence over their monarchs. Charles dreaded the effects of this projected interview between two gallant princes, whose hearts were no less susceptible of friendship than their manners were of inspiring it. Finding it impossible, however, to prevent a visit, in which the vanity of all parties was so much concerned, he endeavoured to defeat its purpose, and to pre-occupy the favor of the English monarch, and of his minister, by an act of complaisance still more flattering and more uncommon. Relying wholly upon Henry's generosity for his safety, he landed at Dover, in his way from Spain to the Low Countries. The king of England, who was on his way to France, charmed with such an instance of confidence, hastened to receive his imperial guest; and Charles, during his short stay had the address not only to give Henry favorable impressions of his character and intentions, but to detach Wolsey entirely from the interest of Francis. The tiara had attracted the eye of that ambitious prelate; and as the emperor knew that the papacy was the sole point of elevation, beyond the greatness he then possessed, at which he could aspire, he made him an offer of his interest on the first vacancy. The day of Charles's departure, Henry went over to Calais with his whole court, to meet Francis. Their interview was in an open plain between Guisnes and Ardres; where the two kings and their attendants displayed their magnificence with such emulation and profuse expense, as procured it the name of the field of the cloth of gold. Here Henry erected a spacious house of wood and canvas, framed in London, on which, under the figure of an English archer, was the following motto:— 'He prevails whom I favor;' alluding to his own political situation as holding in his hands the balance of power among the potentates of Europe. Feats of chivalry, however, parties of gallantry, and such exercises as were in that age reckoned manly or elegant, rather than serious business, occupied the two courts during the time that they continued together, which was eighteen days. After taking leave of this scene of dissipation, the king of England paid a visit to the emperor and Margaret of Savoy at Gravelines, and engaged them to go along with him to Calais; where the artful and politic Charles completed the impression which he had begun to make on Henry and his favorite, and effaced all the friendship to which the frank and generous nature of Francis had given birth. He renewed his assurances of assisting Wolsey in obtaining the papacy; and he put him in immediate possession of the revenues belonging to the sees of Badajoz and Palencia in Spain. He flattered Henry's pride, by convincing him of his own importance, and of the justness of the motto which he had chosen; offering to submit to his sole arbitration any difference that might arise between him and Francis. This important point being secured, Charles repaired to Aix-la-Chapelle, where he was solemnly invested with the crown and sceptre of Charlemagne, in presence of a more splendid and numerous assembly than had appeared on any former inauguration. About the same time Soliman II., one of the most accom-

plished, enterprising, and victorious of the Turkish princes, and a constant and formidable rival to the emperor, ascended the Ottoman throne.

*From the inauguration of Charles V. as emperor to his death.*—The first act of Charles's administration was to appoint a diet of the empire, to be held at Worms, to concert with the princes proper measures for checking the progress of ‘those new and dangerous opinions which threatened to disturb the peace of Germany, and to overturn the religion of their ancestors.’ The opinions propagated by Luther and his followers were here meant. But all his efforts for that purpose were insufficient, as is related under the articles *LUTHER* and *REFORMATION*. In 1521 the Spaniards, dissatisfied with the departure of their sovereign, whose election to the empire they foresaw would interfere with the administration of his own kingdom, and incensed at the avarice of the Flemings, to whom the direction of public affairs had been committed since the death of cardinal Ximenes, several grandees, to shake off this oppression, entered into an association, to which they gave the name of the *sancta juncta*; and the sword was appealed to as the means of redress. This seemed to Francis a favorable juncture for reinstating the family of John d'Albret in the kingdom of Navarre. Charles was at a distance from that part of his dominions, and the troops usually stationed there had been called away to quell the commotions in Spain. A French army, under Andrew de Foix, speedily conquered Navarre; but that young and inexperienced nobleman, pushed on by military ardor, ventured to enter Castile. The Spaniards, though divided among themselves, united against a foreign enemy, routed his forces, took him prisoner, and recovered Navarre in a shorter time than he had spent in subduing it. Hostilities thus begun in one quarter, between the rival monarchs, soon spread to another. The king of France encouraged the duke of Bouillon to make war against the emperor, and to invade Luxembourg. Charles, after humbling the duke, attempted to enter France; but was repelled and worsted before Mezieres by the famous chevalier Bayard, distinguished among his contemporaries by the appellation of ‘the knight without fear and without reproach;’ and who united the talents of a great general to the punctilious honor and romantic gallantry of the heroes of chivalry. Francis broke into the Low Countries, where, by an excess of caution, an error not natural to him, he lost an opportunity of cutting off the whole of the imperial army; and, what was of still more consequence, he disgusted the constable Bourbon, by giving the command of the van to the duke of Alençon. During these operations in the field an unsuccessful congress was held at Calais, under the mediation of Henry VIII. It served only to exasperate the parties whom it was intended to reconcile. A league was soon after concluded by the intrigues of Wolsey, between the pope, Henry, and Charles, against France. Leo had already entered into a separate league with the emperor, and the French were fast losing ground in Italy. The insolence and exactions of marshal de Lautrec, governor of Milan, had totally alienated

the affections of the Milanese from France. They resolved to expel the troops of that nation, and put themselves under the government of Francis Sforza, brother to Maximilian their late duke. In this resolution they were encouraged by the pope, who excommunicated Lautrec, and took into his pay a considerable body of Swiss. The papal army, commanded by Prosper Colonna, an experienced general, was joined by supplies from Germany and Naples; while Lautrec, neglected by his court, and deserted by the Swiss in its pay, was unable to make head against the enemy. The city of Milan was betrayed by the inhabitants to the confederates; Parma and Placentia were united to the ecclesiastical state; and of their conquests in Lombardy only the town of Cremona, the castle of Milan, and a few inconsiderable forts, remained in the hands of the French. Leo X. received the accounts of his rapid success with such transports of joy as are said to have brought on a fever, which occasioned his death. The spirit of the confederacy was broken, and its operations suspended by this event. The Swiss were recalled; some other mercenaries disbanded for want of pay; and only the Spaniards, and a few Germans in the emperor's service, remained to defend the duchy of Milan. But Lautrec, who with the remnant of his army had taken shelter in the Venetian territories, destitute both of men and money, was unable to improve this favorable opportunity as he wished. All his efforts were rendered ineffectual by the vigilance and ability of Colonna and his associates. Meantime much discord prevailed in the conclave. Wolsey's name, notwithstanding all the emperor's magnificent promises, was scarcely mentioned there. Julio de Medici, Leo's nephew, thought himself sure of the election; when, by an unexpected turn of fortune, cardinal Adrian of Utrecht, Charles's preceptor, who at that time governed Spain in the emperor's name, was unanimously raised to the papacy, to the astonishment of all Europe, and the greatest disgust of the Italians. Francis, roused by the rising consequence of his rival, resolved to exert himself with fresh vigor, to wrest from him his late conquests in Lombardy. Lautrec received a supply of money, and a reinforcement of 10,000 Swiss. With this reinforcement he was enabled once more to act offensively, and even to advance within a few miles of Milan; when money again failing him, and the Swiss growing mutinous, he was obliged to attack the imperialists in their camp at Bicocca, where he was repulsed with great slaughter, having lost his bravest officers and best troops. Such of the Swiss as survived set out immediately for their own country; and Lautrec, despairing of being able to keep the field, retired into France. Genoa, which still remained subject to Francis and made it easy to execute any scheme for the recovery of Milan, was soon after taken by Colonna; the authority of the emperor and his faction was every where established in Italy. The citadel of Cremona was the sole fortress which remained in the hands of the French. The affliction of Francis for such a succession of misfortunes was augmented by the unexpected arrival of an English herald, who in the

*name of his sovereign declared war against France. The courage of this excellent prince, however, did not forsake him; though this treasury was exhausted by expensive pleasures, no less than by hostile enterprises, he assembled a considerable army, and put his kingdom in a state of defence for resisting this new enemy, without abandoning any of the schemes which he was forming against the emperor. He was surprised, but not alarmed, at such a denunciation. Meanwhile Charles, willing to draw as much advantage as possible from so powerful an ally, paid a second visit to the court of England in his way to Spain, where his presence was become necessary. His success exceeded his most sanguine expectations. He not only gained the entire friendship of Henry, who publicly ratified the treaty of Burges; but disarmed the resentment of Wolsey, by assuring him of the papacy on Adrian's death; an event seemingly not distant, by reason of his age and infirmities. In consequence of these negociations an English army invaded France, under the earl of Surrey; who, at the end of the campaign, was obliged to retire, with his forces greatly reduced, without being able to make himself master of one place within the French frontier. Charles was more fortunate in Spain; he soon quelled the tumults which had arisen there in his absence. While the Christian princes were thus wasting each other's strength, Soliman entered Hungary, and made himself master of Belgrade, reckoned the chief barrier of that kingdom against the Turkish power. Encouraged by this success, he turned his victorious arms against the island of Rhodes, at that time the seat of the knights of St. John of Jerusalem; and, though every prince in that age acknowledged Rhodes to be the great bulwark of Christendom in the east, so violent was their animosity against each other, that they suffered Soliman without disturbance to carry on his operations against that city and island. Lisle Adam, the grand master, made a gallant defence; but after incredible efforts of courage, patience, and military conduct, during a siege of six months, he was obliged to surrender the place, having obtained an honorable capitulation from the sultan, who admired and respected his heroic qualities. See RHODES and MALTA. Charles and Francis were equally ashamed of having occasioned such a loss to Christendom by their contests; and the emperor, by way of reparation, granted to the knights of St. John the island of Malta, where they fixed their residence, and continued long to retain their ancient spirit, though much diminished in power and splendor. Adrian VI. though the creature of the emperor, and devoted to his interest, endeavoured to assume the impartiality which became the common father of Christendom, and labored to reconcile the contending princes, that they might unite in a league against Soliman, whose conquest of Rhodes rendered him more formidable than ever to Europe. The Italian states were no less desirous of peace than the pope; and so much regard was paid by the hostile powers to the exhortations of his holiness, and to a bull which he issued, requiring all Christian princes to consent*

*to a truce for three years, that the imperial, the French, and the English ambassadors at Rome, were empowered to treat of that matter; but, while they wasted their time in fruitless negotiations, their masters were continuing their preparations for war; and negotiations of another kind soon took place. The confederacy against France became more formidable than ever. The Venetians, who had hitherto adhered to the French interest, formed engagements with the emperor for securing Francis Sforza in the possession of the duchy of Milan; and the pope, from a persuasion that the ambition of the French monarch was the only obstacle to peace, acceded to the same alliance. The Florentines, the dukes of Ferrara and Mantua, and all the Italian powers, followed this example. Francis was left without a single ally, to resist the efforts of a multitude of enemies, whose armies every where threatened, and whose territories encompassed his dominions. The emperor in person menaced France with an invasion on the side of Guienne; the forces of England and the Netherlands hovered over Picardy, and a numerous body of Germans was preparing to ravage Burgundy. The dread of so many and such powerful adversaries, it was thought, would have obliged Francis to keep wholly on the defensive, or at least have prevented him from entertaining any thoughts of marching into Italy. But, before his enemies were able to strike a blow, Francis had assembled a great army, with which he hoped to disconcert all the emperor's schemes, by marching it in person into Italy; and this bold measure, the more formidable because unexpected, could scarcely have failed of the desired effect, had it been immediately carried into execution. But the discovery of a domestic conspiracy, which threatened the destruction of his kingdom, obliged Francis to stop short at Lyons. Charles duke of Bourbon, lord high constable of France, was a prince of the most shining merit; his great talents equally fitted him for the council or the field, while his eminent services to the crown entitled him to its first favor. But unhappily, Louisa, duchess of Augouleme, the king's mother, had contracted a violent aversion against the house of Bourbon, and had taught her son, over whom she had acquired an absolute ascendant, to view all the constable's actions with a jealous eye. After repeated affronts he retired from court, and began to listen to the advances of the emperor's ministers. Mean time the duchess of Bourbon died; and, as the constable was no less amiable than accomplished, the duchess of Augouleme, still susceptible of the tender passions, formed the scheme of marrying him. But Bourbon, who might have expected every thing to which an ambitious mind can aspire, from the doating fondness of a woman who governed her son and the kingdom, incapable of imitating Louisa in her sudden transition from hate to love, or of meanly counterfeiting a passion for one who had so long pursued him with unprovoked malice, rejected the match with disdain, and turned the proposal into ridicule. At once despised and insulted, by the man whom love only could have made her cease to persecute, Louisa was filled with all the rage of disap-*

pointed woman; she resolved to ruin, since she should not marry, Bourbon. For this purpose she commenced an iniquitous suit against him; and, by the chicanery of chancellor du Prat, the constable was stripped of his whole family estate. Driven to despair by so many injuries, he entered into a secret correspondence with the emperor and the king of England; and he proposed, as soon as Francis should have crossed the Alps, to raise an insurrection among his numerous vassals, and introduce foreign enemies into the heart of France. Happily Francis got intimation of this conspiracy before he left the kingdom; but, not being sufficiently convinced of the constable's guilt, he suffered so dangerous a foe to escape; and, Bourbon entering into the emperor's service, employed all the force of his enterprising genius, and his great talents for war, to the prejudice of his prince and his native country. In consequence of the discovery of this plot, and the escape of the powerful conspirator, Francis relinquished his intention of leading his army in person into Italy. He was ignorant how far the infection had spread among his subjects, and afraid that his absence might encourage them to make some desperate attempt in favor of a man so much beloved. He did not, however, abandon his design on the Milanese, but sent forward an army of 30,000 men, under the command of admiral Bonnivet. Colonna, who was entrusted with the defence of that duchy, was in no condition to resist such a force; and the city of Milan, on which the whole territory depends, must have fallen into the hands of the French, had not Bonnivet, who possessed none of the talents of a general, wasted his time in frivolous enterprises, till the inhabitants recovered from their consternation. The imperial army was reinforced. Colonna died; and Lannoy, viceroy of Naples, succeeded him in the command; but the chief direction of military operations was committed to Bourbon and the marquis de Pescara, the greatest generals of their age. Bonnivet, destitute of troops to oppose this new army, and still more of the talents which could render him a match for its leaders, after various movements and encounters, was reduced to the necessity of attempting a retreat into France. He was followed by the imperial generals, and routed at Biagrassa, where the famous chevalier Bayard was killed. The emperor and his allies were less successful in their attempts upon France. They were baffled in every quarter; and Francis, though stripped of his Italian dominions, might still have enjoyed in safety the glory of having defended his native kingdom against one half of Europe, and have bid defiance to all his enemies: but understanding that the king of England, discouraged by his former fruitless enterprises, and disgusted with the emperor, was making no preparations for an attempt on Picardy, his ancient ardor seized him for the conquest of Milan, and he determined, notwithstanding the advanced season, to march into Italy. The French army no sooner appeared in Piedmont, than the whole Milanese was thrown into consternation. The capital opened its gates. The forces of the emperor and Sforza retired to Lodi; and, had Francis been so fortunate

tunate as to pursue them, they must have abandoned that post, and been totally dispersed; but his evil genius led him to besiege Pavia, a town of considerable strength, well garrisoned, and defended by Antonio de Leyva, one of the bravest officers in the Spanish service; before which place he was defeated and taken prisoner on the 24th of February 1524.

The captivity of Francis filled all Europe with alarm. Almost the whole French army was cut off; Milan was immediately abandoned; and in a few weeks not a Frenchman was left in Italy. The power of the emperor, and still more his ambition, became an object of universal terror; and resolutions were every where taken to set bounds to it. Meanwhile Francis, deeply impressed with a sense of his misfortunes, wrote to his mother Louisa, whom he had left regent of the kingdom, the following short but expressive letter:—‘All, madam, is lost but honor.’ The same courier that carried this letter, carried also despatches to Charles; who received the news of the signal and unexpected success which had crowned his arms with the most hypocritical moderation. He would not suffer any public rejoicings to be made on account of it; and said, he only valued it as it would prove the occasion of restoring peace to Christendom. Louisa, however, did not trust to these appearances; if she could not preserve what was yet left, she determined at least that nothing should be lost through her negligence or weakness. Instead of giving herself up to such lamentations as were natural to a woman so remarkable for maternal tenderness, she discovered all the foresight, and exerted all the activity of a consummate politician. She took every possible measure for putting the kingdom in a posture of defence, while she employed all her address to appease the resentment and to gain the friendship of England; and a ray of comfort from that quarter soon broke in upon the French affairs. Though Henry VIII. had not entered into the war against France from any concerted political views, he had always retained some imperfect idea of that balance of power which it was necessary to maintain between Charles and Francis; and the preservation of which he boasted to be his peculiar office. By this alliance with the emperor he hoped to recover some part of those territories on the continent which had belonged to his ancestors; and therefore willingly contributed to give him the ascendancy above his rival; but having never dreamt of any event so decisive and fatal as the victory of Pavia, which seemed not only to have broken, but to have annihilated the power of Francis, he now became sensible of his own danger, as well as that of all Europe, from the loss of a proper counterpoise to the power of Charles. Instead of taking advantage of the distressed condition at France, Henry therefore determined to assist her in her present calamities. Some disgusts had also taken place between him and Charles, and still more between Charles and Wolsey. The elevation of the cardinal of Medicis to St. Peter's chair, on the death of Adrian, under the name of Clement VII., had made the English minister sensible of the insincerity of the emperor's promises, while it extin-

guished all his hopes of the papacy; and he resolved on revenge. Charles, too, had so ill supported the appearance of moderation which he assumed, that he had already changed his usual style to Henry; and, instead of writing to him with his own hand, he dictated his letters to a secretary, and simply subscribed 'Charles.' Influenced by all these motives, together with the glory of raising a fallen enemy, Henry listened to the flattering submissions of Louisa; entered into a defensive alliance with her as regent of France, and engaged to use his best offices to procure the deliverance of her son from captivity. Meanwhile Francis was rigorously confined; and severe conditions being proposed to him as the price of his liberty, he drew his dagger, and, pointing it at his breast, cried, 'Twere better that a king should die thus!' His hand was withheld; and flattering himself, when he grew cool, that such propositions could not come directly from Charles, he desired that he might be removed to Spain, where the emperor then resided. His request was complied with; but he languished long before he obtained a sight of his conqueror. At last he was favored with a visit; and the emperor, dreading a general combination against him, or that Francis, as he threatened, might in obstinacy resign his crown to the dauphin, agreed to abate somewhat of his former demands. A treaty was accordingly concluded at Madrid; in consequence of which Francis obtained his liberty. The chief article was, that Burgundy should be restored to Charles as the rightful inheritance of his ancestors, and that Francis's two eldest sons should be immediately delivered up as hostages for the performance of the conditions stipulated. The exchange of the captive monarch for his children was made on the borders between France and Spain. The moment that Francis entered his own dominions, he mounted a Turkish horse, and, putting it to its speed, waved his hand and cried aloud several times, 'I am yet a king! I am yet a king!'

Francis never meant to execute the treaty of Madrid: he had even left a protest in the hands of notaries before he signed it, that his consent should be considered as an involuntary deed, and be deemed null and void. Accordingly, as soon as he arrived in France, he assembled the states of Burgundy, who protested against the article relative to their province; and Francis coldly replied to the imperial ambassadors, who urged the immediate execution of the treaty, that he would religiously perform the articles relative to himself, but, in those affecting the French monarchy, he must be directed by the sense of the nation. He made the highest acknowledgments to the king of England for his friendly interposition, and offered to be entirely guided by his counsels. Charles and his ministers saw that they were over-reached in those very arts of negotiation in which they so much excelled, while the Italian states observed with pleasure that Francis was resolved not to execute a treaty which they considered as dangerous to the liberties of Europe. Clement absolved him from the oath which he had taken at Madrid; and the kings of France and England, the pope, the Swiss, the Venetians, the Florentines, and the

duke of Milan, entered into an alliance, to which they gave the name of the Holy League, because his holiness was at the head of it, in order to oblige the emperor to deliver up Francis's two sons on the payment of a reasonable ransom, and to re-establish Sforza in the quiet possession of the Milanese. In consequence of this league the confederate army took the field, and Italy once more became the scene of war. But Francis, who it was thought would have infused spirit and vigor into the whole body, had gone through such a scene of distress that he was become dissident of himself, distrustful of his fortune, and desirous of tranquillity. He flattered himself that the dread alone of such a confederacy would induce Charles to listen to what was equitable, and therefore neglected to send due reinforcements to his allies in Italy. Meantime the duke of Bourbon, who commanded the imperialists, had made himself master of the whole Milanese, of which the emperor had promised him the investiture; and his troops beginning to mutiny, for want of pay, he led them to Rome, and promised to enrich them with the spoils of that city. He was as good as his word; for, though he himself was slain in planting a scaling ladder against the walls, his soldiers, rather enraged than disengaged by his death, mounted to the assault with the utmost ardor, animated by the greatness of the prize, and, entering the city sword in hand, plundered it for several days. Never did Rome in any age suffer so many calamities, not even from the Barbarians, by whom she was often subdued, the Huns, Vandals, or Goths, as now from the subjects of a Christian and Catholic monarch. Whatever was respectable in modesty, or sacred in religion, seemed only the more to provoke the rage of the soldiery. Virgins suffered violation in the arms of their parents, and upon those altars to which they had fled for safety! Venerable prelates, after enduring every indignity and every torture, were thrown into dungeons, and menaced with the most cruel death, to make them reveal their secret treasures. Clement himself, who had neglected to make his escape in time, was taken prisoner, and found that the sacredness of his character could neither procure him liberty nor respect. He was confined till he should pay an enormous ransom imposed by the victorious army, and surrendered to the emperor all the places of strength belonging to the church. Charles received the news of this extraordinary event with equal surprise and pleasure; but to conceal his joy from his Spanish subjects, who were filled with horror at the insult offered to the sovereign pontiff, and to lessen the indignation of the rest of Europe, he expressed the most profound sorrow for the success of his arms. He put himself and his court into mourning; stopped the rejoicings for the birth of his son Philip, and ordered prayers to be put up in all the churches of Spain for the recovery of the pope's liberty, which he could immediately have given him by a letter to his generals.

The concern expressed by Henry and Francis for the calamity of their ally was more sincere. Alarmed at the progress of the imperial arms, they had, even before the taking of Rome, entered into a closer alliance, and agreed to invade

the low countries with a powerful army ; but no sooner did they hear of the pope's captivity than they changed, by a new treaty, the scene of the projected war from the Netherlands to Italy, and resolved to take the most vigorous measures for restoring him to liberty. Henry, however, contributed only money. A French army entered Italy under the command of marshal Lautrec ; Clement obtained his freedom ; and war was for a time carried on by the confederates with success ; but the death of Lautrec, and the revolt of Andrew Doria, a famous Genoese admiral in the service of France, entirely changed the face of affairs. The French army was utterly ruined ; and Francis, discouraged and almost exhausted by so many unsuccessful enterprises, began to think of peace, and of obtaining the release of his sons by concessions, not by the terror of his arms. At the same time Charles, notwithstanding the advantages he had gained, had many reasons to wish for an accommodation. Sultan Soliman, having over-run Hungary, was ready to break in upon the Austrian territories with the whole force of the east ; and the progress of the Reformation in Germany threatened the tranquillity of the empire. In consequence of this situation of affairs, though pride made both parties conceal or dissemble their real sentiments, two ladies were permitted to restore peace to Europe. Margaret of Austria, Charles's aunt, and Louisa, Francis's mother, met in 1529 at Cambray, and settled the terms of accommodation between the French king and the emperor. Francis agreed to pay 2,000,000 crowns as the ransom of his two sons, to resign the sovereignty of Flanders and Artois, and to forego all his Italian claims ; and Charles ceased to demand the restitution of Burgundy. All the steps of this negociation had been communicated to the king of England ; and Henry was, on that occasion, so generous to his friend and ally Francis that he sent him an acquittal of nearly 600,000 crowns in order to enable him to fulfil his agreement with Charles. But Francis's Italian confederates were less satisfied with the treaty of Cambray. They were almost wholly abandoned to the will of the emperor ; and seemed to have no other means of security left but his equity and moderation. Of these, from his past conduct, they had not formed the most advantageous idea. But Charles's circumstances, especially in regard to the Turks, obliged him to behave with a generosity inconsistent with his character. The Florentines alone, whom he reduced under the dominion of the family of Medicis, had reason to complain of his severity. Sforza obtained the investiture of Milan and his pardon ; and every other power experienced the lenity of the conqueror. After having received the imperial crown, from the hands of the pope at Bologna, Charles proceeded on his journey to Germany, where his presence was become highly necessary ; for although the conduct and valor of his brother Ferdinand, on whom he had conferred the hereditary dominions of the house of Austria, and who had been elected king of Hungary, had obliged Soliman to retire with infamy and loss, his return was to be feared, and the disorders of religion were daily increasing ; an account of which, and of the em-

peror's transactions with the Protestants, is given under the article REFORMATION. Charles, having exerted himself as much as he could against the reformers, undertook his first expedition against the piratical states of Africa. Barbary, or that part of the African continent lying along the coast of the Mediterranean Sea, was then nearly in the same condition which it is at present. Morocco, Algiers, and Tunis, were its principal states ; and the last two were nests of pirates. Barbarossa, a famous Corsair, had succeeded his brother in the kingdom of Algiers, which he had formerly assisted him to usurp. He regulated with much prudence the interior police of his kingdom, carried on his piracies with great vigor, and extended his conquests on the continent of Africa ; but perceiving that the natives submitted to his government with impatience, and fearing that his continual depredations would one day draw upon him a general combination of the Christian powers, he put his dominions under the protection of the grand signior. Soliman, flattered by such an act of submission, and charmed with the boldness of the man, offered him the command of the Turkish fleet. Proud of this distinction, Barbarossa repaired to Constantinople, and made use of his influence with the sultan to extend his own dominion. Partly by force, partly by treachery, he usurped the kingdom of Tunis ; and, being now possessed of greater power, he carried on his depredations against the Christian states with more destructive violence than ever. Daily complaints of the piracies and ravages committed by the galleys of Barbarossa were brought to the emperor by his subjects, both in Spain and Italy ; and all Christendom seemed to look up to him, as its greatest and most fortunate prince, for relief from this new and odious species of oppression. At the same time Muley Hassen, the exiled king of Tunis, finding none of the African princes able or willing to support him in recovering his throne, applied to Charles for assistance against the usurper. Equally desirous of delivering his dominions from the dangerous neighbourhood of Barbarossa, of appearing as the protector of an unfortunate prince, and of acquiring the glory annexed in that age to every expedition against the Mahometans, the emperor readily concluded a treaty with Muley Hassen, and set sail for Tunis with a formidable armament. The Goletta, a sea-port town fortified with 300 pieces of cannon, was taken, together with all Barbarossa's fleet : he was defeated in a pitched battle ; and, 10,000 Christian slaves having knocked off their fetters and made themselves masters of the citadel, Tunis was preparing to surrender. But, while Charles was deliberating on the conditions, his troops, fearing that they would be deprived of the booty which they had expected, broke suddenly into the town, and pillaged and massacred without distinction : 30,000 persons perished by the sword, and 10,000 were made prisoners. The sceptre was restored to Muley Hassen, on condition that he should acknowledge himself a vassal of the crown of Spain, put into the emperor's hands all the fortified sea-ports in the kingdom of Tunis, and pay annually 12,000 crowns for the subsistence

of the Spanish garrison in the Goletta. These points being settled, and 20,000 Christian slaves freed from bondage either by arms or by treaty, Charles returned to Europe, where his presence was become necessary; while Barbarossa, who had retired to Bona, recovered new strength, and again became the tyrant of the ocean.

The king of France took advantage of the emperor's absence to revive his pretensions in Italy. The treaty of Cambray had covered up, but not extinguished the flames of discord. Francis, who waited only for a favorable opportunity of recovering the territories and reputation which he had lost, continued to negotiate against his rival with different courts. But all his negotiations were disconcerted by unforeseen accidents. The death of Clement VII. (whom he had gained by marrying his son the duke of Orleans, afterwards Henry II., to Catharine of Medicis, the niece of that pontiff), deprived him of all the support which he hoped to receive from the court of Rome. The king of England, occupied with domestic cares and projects, declined engaging in the affairs of the continent and the Protestant princes, associated by the league of Smalkald, to whom Francis had also applied, and who seemed disposed at first to listen to him, filled with indignation and resentment at the cruelty with which some of their reformed brethren had been treated in France, refused to have any connexion with the enemy of their religion. Francis was neither cruel nor bigoted; he was too indolent to concern himself about religious disputes; but his principles becoming suspected, at a time when the emperor was gaining immortal glory by his expeditions against the infidels, he found it necessary to vindicate himself by some extraordinary demonstration of reverence for the established faith. The indiscreet zeal of some Protestant converts furnished him with the occasion. They had affixed to the gates of the Louvre and other public places papers containing indecent reflections on the rites of the Romish church. Six of the persons concerned in this rash action were seized; and the king, pretending to be struck with horror at their blasphemies, appointed a solemn procession, to avert the wrath of heaven. The holy sacrament was carried through the city of Paris in great pomp: Francis walked uncovered before it, bearing a torch in his hand; the princes of the blood supported the canopy over it; the nobles walked behind. In presence of this numerous assembly, the king declared, that if one of his hands were infected with heresy, he would cut it off with the other; 'and I would sacrifice,' added he, 'even my own children, if found guilty of that crime.' As an awful proof of his sincerity, the six unhappy persons who had been seized were publicly burnt before the procession was finished, and in the most cruel manner. They were fixed upon a machine which descended into the flames and retired alternately, until they expired. - No wonder that the Protestant princes were incensed at such barbarity! But Francis, though unsupported by an ally, commanded his army to advance towards the frontiers of Italy, under pretence of chastising the duke of Milan for

a breach of the law of nations, in putting to death his ambassador. The operations of war, however, soon took a new direction. Instead of marching directly to the Milanese, Francis commenced hostilities against the duke of Savoy, with whom he had cause to be dissatisfied, and on whom he had some claims; and, before the end of the campaign, that feeble prince saw himself stripped of all his dominions, except the province of Piedmont. To complete his misfortunes, the city of Geneva, the sovereignty of which he claimed, and where the reformed opinions had already got footing, threw off his yoke; and its revolt drew along with it the loss of the adjacent territory. Geneva was then an imperial city, and ever since remained free, till, in the French revolution, it was forced to become a part of the French republic. In this extremity the duke of Savoy saw no resource but in the emperor's protection; and, as his misfortunes were chiefly occasioned by his attachment to the imperial interest, he had a title to immediate assistance. But Charles, who was just returned from his African expedition, was not able to lend him the necessary support. His treasury was entirely drained, and he was obliged to disband his army till he could raise new supplies. Mean time the death of Sforza duke of Milan entirely changed the nature of the war, and afforded the emperor full leisure to prepare for action. The French monarch's pretext for taking up arms was at once cut off: but, as the duke died without issue, all Francis's rights to the duchy of Milan, which he had yielded only to Sforza and his descendants, returned to him in full force. He instantly renewed his claim to it; and, if he had ordered his army immediately to advance, he might have made himself master of it. But he unfortunately wasted his time in fruitless negotiations, while his more politic rival took possession of the duchy as a vacant fief of the empire; and, though Charles seemed still to admit the equity of Francis's claim, he delayed granting the investiture under various pretences, and was secretly taking every possible measure to prevent him from regaining a footing in Italy. During the time gained in this manner Charles had recruited his finances, and of course his armies; and, finding himself in a condition for war, he at last threw off the mask under which he had so long concealed his designs from the court of France. Entering Rome with great pomp, he pronounced before the pope and cardinals, assembled in full consistory, a violent invective against Francis, by way of reply to his propositions concerning the investiture of Milan. Yet Francis, by an unaccountable fatality, continued to negotiate, as if it had been still possible to terminate their differences in an amicable manner; and Charles, finding him so eager to run into the snare, favored the deception, and, by seeming to listen to his proposals, gained yet more time for the execution of his ambitious projects. If misfortunes had rendered Francis too diffident, success had made Charles too sanguine. He presumed on nothing less than the subversion of the French monarch; nay, he considered it as an infallible event. Having chased the forces of his rival out of Piedmont and

Savoy, he pushed forward at the head of 50,000 men, contrary to the advice of his most experienced ministers and generals, to invade the southern provinces of France; while other two armies were ordered to enter it, the one on the side of Picardy, the other on the side of Champagne. He thought it impossible that Francis could resist so many unexpected attacks on such different quarters; but he found himself mistaken. The French monarch fixed upon the most effectual plan for defeating the invasion of a powerful enemy; and he prudently persevered in following it, though contrary to his own natural temper, and to the genius of his people. He determined to remain altogether upon the defensive, and to deprive the enemy of subsistence by laying waste the country before him. The execution of this plan was committed to the mareschal Montmorency its author, a man happily fitted for such a trust by the inflexible severity of his disposition. He made choice of a strong camp, under the walls of Avignon, at the confluence of the Rhone and Durance, where he assembled a considerable army; while the king, with another body of troops, encamped at Valence, higher up the Rhone. Marseilles and Arles were the only towns he thought it necessary to defend; and each of these he furnished with a numerous garrison of his best troops. The inhabitants of the other towns were compelled to abandon their habitations; the fortifications of such places as might have afforded shelter to the enemy were thrown down; corn, forage, and provisions of every kind, were carried off or destroyed; the mills and ovens were ruined, and the wells filled up or rendered useless. This devastation extended from the Alps to Marseilles, and from the sea to the confines of Dauphiny; so that the emperor when he arrived with the van of his army on the confines of Provence, instead of that rich and populous country which he expected to enter, beheld nothing but one vast and desert solitude. He did not, however, despair of success, though he saw that he should have many difficulties to encounter; and, as an encouragement to his officers, he made them liberal promises of lands and honors in France. But all the land which any of them obtained was a grave, and their master lost much honor by this rash and presumptuous enterprise. After unsuccessfully investing Marseilles and Arles, after attempting in vain to draw Montmorency from his camp at Avignon, and not daring to attack it, Charles having spent two inglorious months in Provence, and lost one-half of his troops by disease or by famine, was under the necessity of ordering a retreat; and, though he was some time in motion before the enemy suspected his intention, it was conducted with so much precipitation and disorder as to deserve the name of a flight, since the light troops of France turned it into a perfect rout. The invasion of Picardy was not more successful; the imperial forces were obliged to retire without effecting any conquest of importance.

Charles had no sooner conducted the shattered remains of his army to the frontiers of Milan, than he set out for Genoa; and, unwilling to expose himself to the scorn of the Italians after

such a reverse of fortune, he embarked directly for Spain. Meanwhile Francis gave himself up to that vain resentment which had formerly disgraced the prosperity of his rival. They had frequently, in the course of their quarrels, given each other the lie, and mutual challenges had been sent; which, though productive of no serious consequences between the parties, had a powerful tendency to encourage the pernicious practice of duelling. Charles, in his invective pronounced at Rome, had publicly accused Francis of perfidy and breach of faith; Francis now exceeded Charles in the indecency of his accusations. The Dauphin dying suddenly, his death was imputed to poison; Montecuculi his cup-bearer was put to the rack; and that unhappy nobleman, in the agonies of torture, accused the emperor's generals, Gonzaga and de Leyva, of instigating him to the detestable act. The emperor himself was suspected; nay, this extorted confession, and some obscure hints, were considered as incontestable proofs of his guilt: though it was evident to all mankind that neither Charles nor his generals could have any inducement to perpetrate such a crime, as Francis was still in the vigor of life himself, and had two sons besides the dauphin, grown up to a good age. But the incensed monarch's resentment did not stop here. Francis was not satisfied with endeavouring to blacken the character of his rival by an ambiguous testimony which led to the most injurious suspicions, and upon which the most cruel constructions had been put; he was willing to add rebellion to murder. For this purpose he went to the parliament of Paris; where, being seated with the usual solemnities, the advocate-general appeared, and accused Charles of Austria (so he affected to call the emperor) of having violated the treaty of Cambrai, by which he was freed from the homage due to the crown of France for the counties of Artois and Flanders; adding, that this treaty being now void, he was still to be considered as a vassal of France, and consequently had been guilty of rebellion in taking arms against his sovereign. The charge was sustained, and Charles was summoned to appear before the parliament of Paris at a day fixed. The term expired; and, no person appearing in the emperor's name, the parliament gave judgment, that Charles of Austria had forfeited, by rebellion and contumacy, the counties of Flanders and Artois, and declared these fiefs reunited to the crown of France. Francis, soon after this vain display of animosity, marched into the Low Countries, as if he had intended to execute the sentence pronounced by his parliament; but a suspension of arms took place, through the interposition of the queens of France and Hungary, before any thing of consequence was effected; and this cessation of hostilities was followed by a truce, concluded at Nice, through the mediation of the reigning pontiff, Paul III. of the family of Farnese, a man of a venerable character and pacific disposition. Each of these rival princes had strong reasons to incline them to a peace. The finances of both were exhausted; and the emperor, the most powerful of the two, was deeply impressed with the dread of the Turkish arms, which

Francis had drawn upon him by a league with Soliman. In consequence of this league, Barbarossa with a great fleet appeared on the coast of Naples; filled that kingdom with consternation; landed without resistance near Taranto; obliged Castro, a place of some strength, to surrender; plundered the adjacent country; and was taking measures for securing and extending his conquests, when the unexpected arrival of Doria, the famous Genoese admiral, together with the pope's galleys and a squadron of the Venetian fleet, made it prudent for him to retire. The sultan's forces also invaded Hungary, where Mahomet, the Turkish general, after gaining several inferior advantages, defeated the Germans in a great battle near Essek, on the Drave. Happily for Charles and Europe it was not in Francis's power, at this juncture, either to join the Turks or assemble an army strong enough to penetrate into the Milanese. The emperor, however, was sensible that he could not long resist the efforts of two such powerful confederates, nor expect that the same fortunate circumstances would concur a second time in his favor; he therefore thought it necessary, both for his safety and reputation, to give his consent to a truce: and Francis chose rather to run the risk of disobliging his newly ally, the sultan, than to draw on his head the indignation, and perhaps the arms, of all Christendom, by obstinately obstructing the re-establishment of tranquillity, and contributing to the aggrandisement of the infidels. These considerations inclined the contending monarchs to listen to the arguments of the holy father; but he found it impossible to bring about a final accommodation between them, each inflexibly persisting in asserting his own claims. Nor could he prevail on them to see one another, though both came to the place of rendezvous; so great were the remains of distrust and rancor, or such the difficulty of adjusting the ceremonial! Yet, improbable as it may seem, a few days after signing the truce, the emperor, in his passage to Barcelona, being driven on the coast of Provence, Francis invited him to come ashore, frankly visited him on board his galley, and was received and entertained with the warmest demonstrations of esteem and affection. Charles, with an equal degree of confidence, paid the king next day a visit at Aigues-mortes; where these two hostile rivals and vindictive enemies, who had accused each other of every kind of baseness, conversing together with all the cordiality of brothers, seemed to vie with each other in expressions of respect and friendship.

Besides the glory of having restored tranquillity to Europe, the pope gained a point of much consequence to his family. He obtained, for his grandson, Margaret of Austria, the emperor's natural daughter, formerly wife of Alexander de Medicis, whom Charles had raised to the supreme power in Florence. Lorenzo de Medicis, the kinsman and intimate companion of Alexander, had assassinated him by one of the blackest treasons recorded in history. Under pretence of having secured him an assignation with a lady of the highest rank and great beauty, he drew him into a secret apartment of his house, and there stabbed him as he lay carelessly on a couch, ex-

pecting the embrace of the lovely fair, whom he had often solicited in vain. Lorenzo, however, did not reap the fruits of his crime; for though some of his countrymen extolled him as a third Brutus, and endeavoured to seize this occasion for recovering their liberties, the government of Florence passed into the hands of Cosmo II., another kinsman of Alexander. Cosmo was desirous of marrying the widow of his predecessor; but the emperor chose rather to oblige the pope, by bestowing his daughter upon Octavio Farnese, son of the duke of Parma. Charles had soon farther cause to be sensible of his obligations to the holy father for bringing about the treaty of Nice. His troops every where mutinied for want of pay, and the ability of his generals only could have prevented a total revolt. He had depended, as his chief resource for discharging the arrears due to his soldiers, upon the subsidies which he expected from his Castilian subjects. For this purpose he assembled the cortes of Castile at Toledo; and, having represented to them the great expense of his military operations, he proposed to levy such supplies as the exigency of affairs demanded, by a general excise on commodities; but the Spaniards, who already felt themselves oppressed by a load of taxes unknown to their ancestors, and who had often complained that their country was drained of its wealth and inhabitants, to prosecute quarrels in which they had no interest, determined not to add voluntarily to their own burdens. The nobles, in particular, inveighed with great vehemence against the imposition proposed, as an encroachment on the valuable and distinguishing privilege of their order, that of being exempted from the payment of any tax. After employing arguments and promises in vain, Charles dismissed the assembly with indignation; and from that period neither the nobles nor the prelates have been called to the Cortes, on pretence that such as pay no part of the public taxes should not claim a vote in laying them on. These assemblies have since consisted merely of the procurators or representatives of eighteen cities, two from each; in all thirty-six members, who are absolutely at the devotion of the crown. The citizens of Ghent, still more bold, broke out not long after into open rebellion against the emperor's government, on account of a tax which they judged contrary to their ancient privileges, and a decision of the council of Mechlin in favor of the imperial authority. Enraged at an unjust imposition, and rendered desperate on seeing their rights betrayed by that very court which was bound to protect them, they flew to arms, seized several of the emperor's officers, and drove such of the nobility as resided among them out of the city. Sensible, however, of their inability to support what their zeal had prompted them to undertake, and desirous of securing a protector against the formidable forces with which they might expect soon to be attacked, they offered to acknowledge the king of France as their sovereign, to put him into immediate possession of their city, and to assist him in recovering those provinces in the Netherlands which had anciently belonged to his crown. True policy should have directed Francis to comply

with this proposal. The counties of Flanders and Artois were more valuable than the duchy of Milan, for which he had so long contended; and their situation in regard to France made it more easy to conquer or to defend them. But Francis over-rated the Milanese. He had lived in friendship with the emperor ever since their interview at Aigues-mortes, and Charles had promised him the investiture of that duchy. Forgetting, therefore, all his past injuries, and the deceitful promises by which he had been so often duped, the credulous, generous Francis, not only rejected the propositions of the citizens of Ghent, but communicated to the emperor his whole negociation with the malcontents. Judging of Charles's heart by his own, Francis hoped by this seemingly disinterested proceeding to obtain at once the investiture of Milan; and the emperor, well acquainted with the weakness of his rival, flattered him in this apprehension, for his own selfish purposes. His presence being necessary in the Netherlands, he demanded a passage through France. It was immediately granted him; and Charles, to whom every moment was precious, set out, notwithstanding the remonstrances of his council and the fears of his Spanish subjects, with a small but splendid train of 100 persons. He was met on the frontiers of France by the dauphin and the duke of Orleans, who offered to go into Spain, and remain there as hostages, till he should reach his own dominions; but Charles replied that the king's honor was sufficient for his safety, and prosecuted his journey without any other security. The king entertained him with the utmost magnificence at Paris, and the two young princes did not take leave of him till he entered the Low Countries; yet he still found means to evade his promise, and Francis continued to believe him sincere. The citizens of Ghent, alarmed at the approach of the emperor, who was joined by three armies, sent ambassadors to implore his mercy, and offered to throw open their gates. Charles only condescended to reply, 'That he would appear among them as a sovereign and a judge, with the sceptre and the sword.' He accordingly entered the place of his nativity on the anniversary of his birth! and, instead of that lenity which might have been expected, exhibited an awful example of his severity. Twenty-six of the principal citizens were put to death; a greater number were banished; the city was declared to have forfeited its privileges; a new system of laws and political administration was prescribed; and a large fine was imposed on the inhabitants, to defray the expense of erecting a citadel, together with an annual tax for the support of a garrison. They were not only despoiled of their ancient immunities, but made to pay, like conquered people, for the means of perpetuating their own slavery. We need not wonder that the descendants of these ill-used people should have been the readiest and most zealous of all the German democrates in joining the French, in the last war, and throwing off the yoke of Austria. They could have hardly been worse used by Buonaparte. Having thus re-established his authority in the Low Countries, and being now under no necessity of continuing

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that scene of falsehood and dissimulation with which he had amused the French monarch, Charles began gradually to throw aside the veil under which he had concealed his intentions with respect to the Milanese, and at last peremptorily refused to give up a territory of such value, or voluntarily to make such a liberal addition to the strength of an enemy by diminishing his own power. He even denied that he had ever made any promise which could bind him to an action so foolish, and so contrary to his own interest. This transaction exposed the king of France to as much scorn as it did the emperor to censure. The credulous simplicity of Francis seemed to merit no other return, after experiencing so often the duplicity and artifices of his rival. He remonstrated, however, and exclaimed as if this had been the first circumstance in which the emperor had deceived him. The insult offered to his understanding affected him even more sensibly than the injury done to his interest; and he discovered such resentment as made it obvious that he would seize on the first opportunity of revenge, and that a new war would soon desolate the European continent. Meanwhile Charles was obliged to turn his attention towards the affairs of Germany. The Protestants, having in vain demanded a general council, pressed him earnestly to appoint a conference between a select number of divines of each party, to examine the points in dispute. For this purpose a diet was assembled at Ratisbon; and such a conference, notwithstanding the opposition of the pope, was held with great solemnity in the presence of the emperor. But the divines chosen to manage the controversy, though men of learning and moderation, were only able to settle a few speculative opinions, all points relative to worship and jurisdiction serving to inflame the minds of the disputants. Charles, therefore, finding his endeavours to bring about an accommodation ineffectual, and being impatient to close the diet, prevailed on a majority of the members to approve of the following edict of recess; viz. that the articles concerning which the divines had agreed should be held as points decided: that those about which they had differed should be referred to the determination of a general council, or, if that could not be obtained, to a national synod; and, should it prove impracticable also to assemble a synod of Germany, that a general diet of the empire should be called within eighteen months, to give final judgment on the whole controversy: that, in the mean time, no innovations should be attempted, nor any endeavours employed to gain proselytes. This diet gave great offence to the pope. The bare mention of allowing a diet, composed chiefly of laymen, to pass judgment in regard to articles of faith, appeared to him no less criminal and profane than the worst of those heresies which the emperor seemed so zealous to suppress. The Protestants also were dissatisfied with it as it considerably abridged the liberty which they at that time enjoyed. They murmured loudly against it; and Charles, unwilling to leave any seeds of discontent in the empire, granted them a private declaration, exempting them from what-

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ever they thought injurious or oppressive in the recess, and ascertaining to them the full possession of all their former privileges.

The situation of the emperor's affairs at this juncture made these extraordinary concessions necessary. He foresaw a rupture with France to be unavoidable, and he was alarmed at the rapid progress of the Turks in Hungary. A great revolution had happened in that kingdom. John Zapol Scapus, by the assistance of Soliman, had wrested from the king of the Romans a considerable part of the country. John died, and left an infant son. Ferdinand attempted to take advantage of the minority, in order to repossess himself of the whole kingdom; but his ambition was disappointed by the activity and address of George Martinuzzi, bishop of Waradin, who shared the regency with the queen. Sensible that he was unable to oppose the king of the Romans in the field, Martinuzzi satisfied himself with holding out the fortified towns, all of which he provided with every thing necessary for defence; and at the same time he sent ambassadors to Soliman, beseeching him to extend towards the son that imperial protection which had so generously maintained the father on his throne. Ferdinand used his utmost endeavours to thwart this negotiation, and even meanly offered to hold the Hungarian crown on the same ignominious condition by which John had held it, that of paying tribute to the Porte. But the sultan saw such advantages from espousing the interest of the young king, that he instantly marched into Hungary; and the Germans, having formed the siege of Buda, were defeated with great slaughter before that city. Soliman, however, instead of becoming the protector of the infant sovereign whom he had relieved, made use of this success to extend his own dominions; he sent the queen and her son into Transylvania, which province he allotted them, and added Hungary to the Ottoman empire. Happily for the Protestants, Charles received intelligence of this revolution soon after the diet at Ratisbon; and, by the concessions which he made them, he obtained such liberal supplies, both of men and money, as left him under little anxiety about the security of Germany. He therefore hastened to join his fleet and army in Italy, in order to carry into execution a great and favorite enterprise which he had concerted against Algiers; though it would certainly have been more consistent with his dignity to have conducted the whole force of the empire against Soliman, the common enemy of Christendom, who was ready to enter his Austrian dominions. But many reasons induced Charles to prefer the African expedition; he wanted strength, or at least money, to combat the Turks in so distant a country as Hungary; and the glory which he had formerly acquired in Barbary led him to hope for the like success, while the cries of his Spanish subjects roused him to take vengeance on their ravagers. The loss which the emperor suffered in this calamitous expedition encouraged the king of France to begin hostilities, on which he had been for some time resolved; and an action dishonorable to civil society furnished him with too good a pretext for taking arms. The marquis del Guasto, governor of the Milanese,

having got intelligence of the motions and destination of two ambassadors, Rincon and Fergosa, whom Francis had despatched, the one to the Ottoman Porte, the other to the republic of Venice; knowing how much his master wished to discover the intentions of the French monarch, and of what consequence it was to retard the execution of his measures, he employed some soldiers belonging to the garrison of Pavia to lie in wait for these ambassadors as they sailed down the Po, who murdered them and most of their attendants, and seized their papers. Francis immediately demanded reparation for this barbarous outrage; and as Charles endeavoured to put him off with an evasive answer, he appealed to all the courts of Europe, setting forth the heinousness of the injury, the iniquity of the emperor in disregarding his just request, and the necessity of vengeance. But Charles, who was a more profound negotiator, defeated in a great measure the effects of these representations; he secured the fidelity of the Protestant princes in Germany, by granting them new concessions; and he engaged the king of England to espouse his cause, under pretence of defending Europe against the infidels; while Francis was only able to form an alliance with the kings of Denmark and Sweden (who for the first time interested themselves in the quarrels of the more potent monarchs of the south), and to renew his treaty with Soliman, which drew on him the indignation of all Christendom. But the activity of Francis supplied all the defects of his negotiation. Five armies were soon ready to take the field, under different generals, and with different destinations. Nor was Charles wanting in his preparations. He and Henry a second time made an ideal division of the kingdom of France. But as the hostilities which followed terminated in nothing decisive, and were distinguished by no remarkable event, except the battles of Cerisoles (gained by count d'Enguier over the imperialists, and in which 10,000 of the emperor's best troops fell), at last Francis and Charles, mutually tired of harassing each other, concluded at Crespy a treaty of peace in which the king of England was not mentioned; and, from being implacable enemies, became once more, to appearance, cordial friends, and even allies by the ties of blood. The chief articles of this treaty were, that all the conquests which either party had made since the truce of Nice should be restored; that the emperor should give in marriage to the duke of Orleans, either his eldest daughter, with the Low Countries, or the second daughter of his brother Ferdinand, with the investiture of the Milanese; that Francis should renounce all pretensions to the kingdom of Naples, as well as to the sovereignty of Flanders and Artois, and Charles give up his claim to the duchy of Burgundy; and that both should unite in making war against the Turks.

The emperor was chiefly induced to grant conditions so advantageous to France, by a desire of humbling the Protestant princes in Germany. With the papal jurisdiction, he foresaw they would endeavour to throw off the imperial authority; and he determined to make his zeal for the former a pretence for enforcing and extending the latter. However, the death of the duke of Orleans, before the consummation of his

marriage, disentangled the emperor from the most troublesome stipulation in the treaty of Crespy; and the French monarch, being still engaged in hostilities with England, was unable to obtain any reparation for the loss which he suffered by this unforeseen event. These hostilities, like those between Charles and Francis, terminated in nothing decisive. Equally tired of a struggle attended with no glory or advantage to either, the contending princes concluded, at Campe, near Ardies, a treaty of peace; in which it was stipulated that France should pay the arrears due by former treaties to England. But these arrears did not exceed one-third of the sums expended by Henry on his military operations; and, Francis being in no condition to discharge them, Boulogne (a chargeable pledge) was left in the hands of the English as a security for the debt. In consequence of the emperor's resolution to humble the Protestant princes, he concluded a dishonorable peace with the Porte, stipulating that his brother Ferdinand should pay tribute for that part of Hungary which he still possessed; while the sultan enjoyed the imperial and undisturbed possession of all the rest. At the same time he entered into a league with pope Paul III. for the extirpation of heresy; but in reality with a view to oppress the liberties of Germany. Here, however, his ambition met with a severe check; for, though he was successful at first, he was obliged in 1555 to conclude a peace with the Protestants on their own terms. See REFORMATION.

By the peace concluded on this occasion, the emperor lost Metz, Toul, and Verdun, which had formed the barrier of the empire on that quarter; and therefore soon after put himself at the head of an army, in order to recover these three bishoprics. In order to conceal the destination of his army, he gave out that he intended to lead it into Hungary, to second Maurice in his operations against the Infidels; and, as that pretext failed him, when he began to advance towards the Rhine, he propagated a report that he was marching first to chastise Albert of Brandenburgh, who had refused to be included in the treaty of Passau, and whose cruel exactions in that part of Germany called loudly for redress. The French, however, were not deceived by these arts. Henry immediately guessed the true object of Charles's armament, and resolved to defend his conquests with vigor. The defence of Metz, against which it was foreseen the whole weight of the war would be turned, was committed to Francis of Lorraine, duke of Guise, who possessed in an eminent degree all the qualities that render men great in military command. He repaired with joy to the dangerous station; and many of the French nobility, and even princes of the blood, eager to distinguish themselves under such a leader, entered Metz as volunteers. The city was of great extent ill, fortified, and the suburbs large. For all these defects the duke endeavoured to provide a remedy. He repaired the old fortifications with all possible expedition, laboring with his own hands; the officers imitated his example; and the soldiers, thus encouraged, cheerfully submitted to the most severe toils; he erected new works, and he levelled the

suburbs with the ground. At the same time he filled the magazines with provisions and military stores, compelled all useless persons to leave the place, and laid waste the neighbouring country; yet such were his popular talents, as well as his arts of acquiring an ascendant over the minds of men, that the citizens not only refrained from murmuring, but seconded him with no less ardor than the soldiers in all his operations—in the ruin of their estates, and in the havoc of their public and private buildings. Meanwhile the emperor continued his march towards Lorraine, at the head of 60,000 men. On his approach, Albert of Brandenburgh, whose army did not exceed 20,000, withdrew into that principality, as if he intended to join the French king; and Charles, notwithstanding the advanced season, it being towards the end of October, laid siege to Metz, contrary to the advice of the most experienced officers. The attention of both the besiegers and the besieged was turned for some time towards the motions of Albert, who still hovered in the neighbourhood, undetermined which side to take, though resolved to sell his service. Charles at last came up to his price, and he joined the imperial army. The emperor now flattered himself that nothing could resist his force; but he found himself deceived. After a siege of almost sixty days, during which he attempted all that was thought possible for art or valor to effect, and had lost upwards of 30,000 men by the inclemency of the weather, diseases, or the sword of the enemy, he was obliged to abandon the enterprise. When the French sallied out to attack the enemy's rear, the imperial camp was filled with the sick and wounded, with the dead and the dying. All the roads by which the army retired were strewed with the same miserable objects; who, having made an effort beyond their strength to escape, and not being able to proceed, were left to perish without assistance. Happily that, and all the kind offices which their friends had not the power to perform, they received from their enemies. The duke of Guise ordered them all to be taken care of, and supplied with every necessary; he appointed physicians to attend and direct what treatment was proper for the sick and wounded, and what refreshments for the feeble; and such as recovered he sent home, under an escort of soldiers, and with money to bear their charges. By these acts of humanity, less common in that age, the duke of Guise completed that heroic character which he had justly acquired by his brave and successful defence of Metz. The emperor's misfortunes were not confined to Germany. During his residence at Villach, he had been obliged to borrow 200,000 crowns of Cosmo de Medicis, and so low was his credit that he was obliged to put Cosmo in possession of the principality of Piombino as a security for that inconsiderable sum; by which means he lost the footing he had hitherto maintained in Tuscany. Much about the same time he lost Sienna. The citizens, who had long enjoyed a republican government, rose against the Spanish garrison, which they had admitted as a check upon the tyranny of the nobility, but which they found was meant to enslave them; forgetting their do-

mestic animosities, they recalled the exiled nobles; they demolished the citadel, and put themselves under the protection of France. To these unfortunate events one still more fatal had almost succeeded. The severe administration of the viceroy of Naples had filled that kingdom with murmuring and dissatisfaction. The prince of Salerno, the head of the malcontents, fled to the court of France. The French monarch, after the example of his father, applied to the grand signior; and Soliman, at that time highly incensed against the house of Austria, on account of the proceedings in Hungary, sent a powerful fleet into the Mediterranean, under the command of the corsair Dragut, an officer trained up under Barbarossa, and scarcely inferior to his master in courage, talents, or in good fortune. Dragut appeared on the coast of Calabria at the time appointed; but not being joined by the French fleet, according to concert, he returned to Constantinople, after plundering and burning several places, and filling Naples with consternation. Highly mortified by so many disasters, Charles retired into the Low Countries, breathing vengeance against France: and here the war was carried on with considerable vigor. Impatient to efface the stain which his military reputation had received before Metz, Charles laid siege to Terouane; and, the fortifications being in disrepair, that important place was carried by assault. Hesdin also was invested, and carried in the same manner. The king of France was too late in assembling his forces to afford relief to either of these places; and the emperor afterwards cautiously avoided an engagement. The imperial arms were less successful in Italy. The viceroy of Naples failed in an attempt to recover Sienna; and the French not only established themselves more firmly in Tuscany, but conquered part of the island of Corsica. Nor did the affairs of the house of Austria go on better in Hungary during the course of this year. Isabella and her son appeared once more in Transylvania, at a time when the people were ready for revolt, in order to revenge the death of Martinuzzi, whose loss they had severely felt. Some noblemen of eminence declared in favor of the young king; and the bashaw of Belgrade, by Soliman's order, espousing his cause, in opposition to Ferdinand, Castaldo, the Austrian general, was obliged to abandon Transylvania to Isabella and the Turks. To counterbalance these and other losses, the emperor, in 1554, concerted a marriage between his son Philip and Mary of England, in hopes of adding that kingdom to his other dominions. Meanwhile the war between Henry and Charles was carried on with various success in the Low Countries, and in Italy much to the disadvantage of France. The French, under the command of Strozzi, were defeated in the battle of Merciano; Sienna was reduced by Medicino, the Florentine general, after a siege of ten months; and the gallant Sienese were subjected to the Spanish yoke. Much about the same time a plot was formed by the Franciscans, but happily discovered before it could be carried into execution, to betray Metz to the imperialists. The father, guardian, and twenty other monks, received sentence of death on account of this conspiracy, but

the guardian, before the time appointed for his execution, was murdered by his incensed accomplices, whom he had seduced; and six of the youngest were pardoned. While war thus raged in Italy, and the Low Countries, Germany enjoyed such profound tranquillity as afforded the diet full leisure to confirm and perfect the plan of religious pacification agreed upon at Passau, and referred to the consideration of the next meeting of the Germanic body.

During the negotiation of this treaty an event happened which astonished all Europe and confounded the reasonings of the wisest politicians. The emperor Charles V., though no more than fifty-six, an age when objects of ambition operate with full force on the mind, and are generally pursued with the greatest ardor, had for some time formed the resolution of resigning his hereditary dominions to his son Philip. He now determined to put it in execution. Various have been the opinions of historians concerning a resolution so singular and unexpected; but the most probable seem to be the disappointments which Charles had met with in his ambitious hopes, and the daily decline of his health. He had early in life been attacked with the gout; and the fits were now become so frequent and severe, that not only the vigor of his constitution was broken, but the faculties of his mind were sensibly impaired. He therefore judged it more decent to conceal his infirmities in some solitude, than to expose them any longer to the public eye; and as he was unwilling to forfeit the fame, or lose the acquisitions of his better years, by attempting to guide the reins of government when he was no longer able to hold them with steadiness, he determined to seek, in the tranquillity of retirement, that happiness which he had in vain pursued amidst the tumults of war and the intrigues of state. In consequence of this resolution Charles, who had already ceded to his son Philip the kingdom of Naples and the duchy of Milan, assembled the states of the Low Countries at Brussels; and, seating himself for the last time in the chair of state, he explained to his subjects the reasons of his resignation, and solemnly devolved his authority upon Philip. He recounted with dignity, but without ostentation, all the great things which he had undertaken and performed since the commencement of his administration. A few weeks after he resigned to Philip the sovereignty of Spain and America; reserving nothing to himself out of all these vast possessions but an annual pension of 100,000 crowns. Charles was now impatient to embark for Spain, where he had fixed on a place of retreat; but by the advice of his physicians he put off his voyage for some months on account of the severity of the season; and, by yielding to their judgment, he had the satisfaction, before he left the Low Countries, of taking a considerable step towards a peace with France. This he ardently longed for; not only on his son's account, whose administration he wished to commence in quietness, but that he might have the glory, when quitting the world, of restoring to Europe that tranquillity which his ambition had banished out of it almost from the time that he assumed the reins of government. The great bar to such a

pacification, on the part of France, was the treaty which Henry had concluded with the pope; and the emperor's claims were too numerous to hope for adjusting them suddenly.

A truce of five years was therefore proposed by Charles; during which term, without discussing their respective pretensions, each should retain what was in his possession; and Henry, through the persuasion of the constable Montmorency, who represented the imprudence of sacrificing the true interests of his kingdom to the rash engagements that he had come under with Paul, authorised his ambassadors to sign at Vaucelles a treaty which would ensure to him, for so considerable a period, the important conquest which he had made on the German frontier, together with the greater part of the duke of Savoy's dominions. The pope, when informed of this transaction, was no less filled with terror and astonishment than rage and indignation. But he took equal care to conceal his fear and his anger. He affected to approve highly of the truce; and he offered his mediation, as the common father of Christendom, in order to bring about a definitive treaty of peace. Under this pretext he appointed cardinal Rebibo his nuncio to the court of Brussels, and his nephew, cardinal Caraffa, to that of Paris. The public instructions of both were the same; but Caraffa, besides these, received a private commission to spare neither entreaties, promises, nor bribes, to induce the French monarch to renounce the truce and renew his engagements with the holy see. He flattered Henry with the conquest of Naples; he gained by his address the Guises, the queen, and even the famous Diana of Poictiers, duchess of Valentinois, the king's mistress; and they easily swayed the king himself who already leaned to that side. All Montmorency's prudent remonstrances were disregarded; the nuncio (by powers from Rome) absolved Henry from his oath of truce; and that weak prince signed a new treaty with the pope; which re-kindled with fresh violence the flames of war both in Italy and the Low Countries. No sooner was Paul made acquainted with the success of this negociation than he proceeded to the most indecent extremities against Philip. He ordered the Spanish ambassador to be imprisoned; he excommunicated the Colonnes because of their attachment to the imperial house; and he considered Philip as guilty of high treason, and to have forfeited his right to the kingdom of Naples, which he was supposed to hold of the holy see, for afterward affording them a retreat in his dominions. Alarmed at a quarrel with the pope, whom he had been taught to regard with the most superstitious veneration, Philip tried every gentle method before he made use of force. He even consulted some Spanish divines on the lawfulness of taking arms against a person so sacred. They decided in his favor; and, Paul continuing inexorable, the duke of Alva, to whom the negociations as well as the war had been committed, entered the ecclesiastical state at the head of 10,000 veterans, and carried terror to the gates of Rome. The haughty pontiff, though still inflexible and undaunted in himself, was forced to give way to the fears of the cardinals, and a truce was concluded for

forty days. Mean time the duke of Guise arriving with a supply of 20,000 French troops Paul became more arrogant than ever, and banished all thoughts from his mind but those of war and revenge. The duke of Guise, however, who had precipitated his country into this war chiefly from a desire of gaining a field where he might display his own talents, was able to perform nothing in Italy worthy of his former fame. He was obliged to abandon the siege of Civitella; he could not bring the duke of Alva to a general engagement; his army perished by diseases; and the pope neglected to furnish the necessary reinforcements. He begged to be recalled; and France stood in need of his talents. Philip, though willing to have avoided a rupture, was no sooner informed that Henry had violated the truce of Vaucelles than he determined to act with such vigor as should convince Europe that his father had not erred in resigning to him the reins of government. He immediately assembled in the Low Countries a body of 50,000 men, and obtained a supply of 10,000 from England, whom he had engaged in his quarrel; and as he was not ambitious of military fame he gave the command of his army to Emanuel Philibert, duke of Savoy, one of the greatest generals of that warlike age. The duke of Savoy kept the enemy for some time in suspense with regard to his destination; at last he seemed to threaten Champagne, towards which the French drew all their troops; then turning suddenly to the right he advanced by rapid marches into Picardy and laid siege to St. Quintin. It was deemed in those times a town of considerable strength; but the fortifications had been much neglected, and the garrison did not amount to a fifth part of the number requisite for its defence; it must therefore have surrendered in a few days if admiral Coligny had not taken the gallant resolution of throwing himself into it with such a body of men as could be collected on a sudden.. This he effected in spite of the enemy, breaking through their main body. The place, however, was closely invested; and the constable Montmorency, anxious to extricate his nephew out of that perilous situation in which his zeal for the public had engaged him, as well as to save a town of such importance, rashly advanced to its relief with forces one-half inferior to those of the enemy. His army was cut in pieces, and he himself made prisoner. The cautious temper of Philip on this occasion saved France from devastation, if not ruin. The duke of Savoy proposed to overlook all inferior objects and march speedily to Paris, which, in its consternation at that moment, he could not have failed to make himself master of; but Philip, afraid of the consequences of such a bold enterprise, desired him to continue the siege of St. Quintin, to secure a safe retreat in case of any disaster. The town, long and gallantly defended by Coligny, was at last taken by storm, but not till France was in a state of defence. Philip was now sensible that he had lost an opportunity which could never be recalled of distressing his enemy, and contented himself with reducing Horn and Catelet; which petty towns, together with St. Quintin, were the sole fruits of one of the most deci-

sive victories gained in the sixteenth century. The Catholic king, however, continued in high exultation on account of his success; and, as all his passions were tinged with superstition, he vowed to build a church, a monastery, and a palace, in honor of St. Laurence, on the day sacred to whose memory the battle of St. Quintin had been fought. He accordingly laid the foundation of an edifice in which all these were included, and which he continued to forward at vast expense for twenty-two years. The same principle which dictated the vow directed the building. It was so formed as to resemble a gridiron—on which culinary instrument, according to the legendary tale, St. Laurence had suffered martyrdom. Such is the origin of the famous Escorial near Madrid, the royal residence of the kings of Spain.

The first account of that fatal blow which France had received at St. Quintin was carried to Rome by the courier whom Henry had sent to recall the duke of Guise. Paul remonstrated warmly against the departure of the French army; but Guise's orders were peremptory. The arrogant pontiff therefore found it necessary to accommodate his conduct to the exigency of his affairs, and to employ the mediation of the Venetians, and of Cosmo de Medici, to obtain peace. The first overtures of this nature were eagerly listened to by the Catholic king, who still doubted the justice of his cause, and considered it as his greatest misfortune to be obliged to contend with the pope. Paul agreed to renounce his league with France; and Philip stipulated on his part that the duke of Alva should repair in person to Rome, and after asking pardon of the holy father in his own name and in that of his master, for having invaded the patrimony of the church, should receive absolution from that crime. Thus Paul, through the superstitious timidity of Philip, not only finished an unpropitious war without any detriment to the apostolic see, but saw his conqueror humble at his feet; and so excessive was the veneration of the Spaniards in that age for the papal character, that the duke of Alva, the proudest man perhaps of his time, and accustomed from his infancy to converse with princes, acknowledged that, when he approached Paul, he was so much overawed that his voice failed, and his presence of mind forsook him. But though this war, which at its commencement threatened mighty revolutions, was terminated without occasioning any alteration in those states which were its immediate object, it produced effects of considerable consequence in other parts of Italy. In order to detach Octavia Farnese, duke of Parma, from the French interest, Philip restored to him the city of Placentia and its territory, which had been seized by Charles V., and he granted to Cosmo de Medici the investiture of Sienna, as an equivalent for the sums due to him. By these treaties, the balance of power among the Italian states was poised with more equality, and rendered less variable than it had been since it received the first violent shock from the invasion of Charles VIII., and Italy henceforth ceased to be the theatre on which the monarchs of Spain, France, and Germany, contended for fame and dominion. Their hostilities, ex-

cited by new objects, stained other regions of Europe with blood, and made other states feel in their turn, the miseries of war. The duke of Guise, who left Rome the same day that his adversary the duke of Alva made his humiliating submission to the pope, was received in France as the guardian angel of the kingdom. He was appointed lieutenant-general in chief, with a jurisdiction almost unlimited; and, eager to justify the extraordinary confidence which the king had reposed in him, as well as to perform something suitable to the high expectations of his countrymen, he undertook in winter the siege of Calais. Having taken that place, he next invested Thionville in the duchy of Luxembourg, one of the strongest towns on the frontiers of the Netherlands; and forced it to capitulate after a siege of three weeks. But the advantages on this quarter were more than balanced by an event which happened in another part of the Netherlands. The mairechal de Termes, governor of Calais, who had penetrated into Flanders and taken Dunkirk, was totally routed near Gravelines, and taken prisoner by count Egmont. This disaster obliged the duke of Guise to relinquish all his other schemes, and hasten towards the frontiers of Picardy, that he might there oppose the progress of the enemy. The eyes of all France were now turned towards the duke of Guise, as the only general on whose arms victory always attended, and in whose conduct as well as good fortune they could confide in every danger. His strength was nearly equal to the duke of Savoy's, each commanding about 40,000 men. They encamped at a distance of a few leagues from one another; and, the French and Spanish monarchs having joined their respective armies, it was expected that, after the vicissitudes of war, a decisive battle would at last determine which of the rivals should take the ascendant for the future in the affairs of Europe. But both monarchs, as if by agreement, stood on the defensive; neither of them discovering any inclination, though each had it in his power, to rest the decision of a point of such importance on the issue of a single battle. During this state of inaction, peace began to be mentioned in each camp, and both Henry and Philip discovered an equal disposition to listen to any overture that tended to re-establish it. The private inclinations of both kings concurred with their political interests and the wishes of their people. Philip languished to return to Spain, the place of his nativity; and peace only could enable him, either with decency or safety, to quit the Netherlands. Henry was now desirous of being freed from the avocations of war, that he might have leisure to turn the whole force of his government towards suppressing the opinions of the reformers, which were spreading with such rapidity in Paris and the other great towns, that they began to grow formidable to the established church. Court intrigues conspired with these public and avowed motives to hasten the negociation, and the abbey of Cercamp was fixed on as the place of congress. While Philip and Henry were making these advances towards a treaty which restored tranquillity to Europe, Charles V., whose ambition had so long disturbed it, but who had been for some time dead to the world, ended

## S P A I N.

his days in the monastery of St Justus in Estremadura, which he had chosen as the place of his retreat.

*History of Spain, unto the revolt of Portugal.*—After the death of Charles, the kingdom of Spain soon lost great part of its consequence. Though Charles had used all his interest to get his son Philip elected emperor of Germany, he had been totally disappointed; and thus the grandeur of Philip II. never equalled that of his father. His dominions were also considerably abridged by his tyrannical behaviour in the Netherlands. In consequence of this, the united provinces revolted; and, after a long and bloody war, obtained their liberty. In this quarrel Elizabeth of England took part against Philip, which brought on a war with Spain. The great losses he sustained in these wars exhausted the kingdom both of men and money, notwithstanding the great sums imported from America. Indeed, the discovery and conquest of that country has rather impoverished than enriched Spain; for the inhabitants have thus been rendered lazy and averse from every kind of manufacture or traffic. The ruin of the kingdom in this respect, however, was completed by his successor. The rest of the transactions of Philip II.'s reign, with his general character, cruelties, and monstrous bigotry, are related under the article *PHILIP II.* He died September 13th, 1598, and was succeeded by his son Philip III., of whose general character and transactions we have also given a summary account under the article *PHILIP III.* This monarch, at the instigation of the inquisition, and by the advice of his prime minister the duke of Lerma, expelled from the kingdom all the Morescoes or Moors, descendants of the ancient conquerors of Spain. Thirty days only were allowed them to prepare for their departure, and it was death to remain beyond that time. The reason pretended for this barbarous decree was, that these people were still Mahometans in their hearts, though they conformed externally to the rites of Christianity, and thus might corrupt the true faith. The Morescoes, however, chose themselves a king, and attempted to oppose the royal mandate; but, being almost entirely unprovided with arms, they were soon obliged to submit, and all banished the kingdom. By this violent and impolitic measure, Spain lost almost a million of intelligent inhabitants; and, as the kingdom was already depopulated by bloody wars, by repeated emigrations to America, and enervated by luxury, it now sunk into a state of languor from which it has never recovered. In consequence of this languor, and the maladministration of the Spanish governors, Portugal, which had been reduced by Philip II., revolted (see *PORTUGAL*): but this revolution did not happen till the reign of Philip IV., who succeeded his father Philip III., in 1621; and having rashly engaged in two unsuccessful wars, first with the Dutch, and afterwards with the French, the Portuguese, whose oppressions and grievances had increased after the death of Philip II., were encouraged to throw off the Spanish yoke in 1640, and elect John duke of Braganza their king, whose posterity still enjoy that throne.

*History of Spain, during the remainder of the sixteenth and seventeenth centuries.*—Philip IV. died in 1665, and was succeeded by his son Charles II.; for the emperor Charles V., was the first of the name in Spain. Charles II. was, at his accession, an infant in every sense of the word, being only four years of age. He was twice married, but died without issue, in November 1700, aged thirty-nine. By his first will, in 1698, he had named for his successor the prince of Bavaria, nephew of his second queen; but by another will, in 1700, he appointed prince Philip of France, duke of Anjou, his heir, which, after his death, occasioned a new war, wherein the British court took an active part. Queen Anne had but newly commenced her reign when this resolution was taken; and a British army was sent into Spain to support prince Charles of Austria, in opposition to Philip of Anjou, second son of Louis duke of Anjou, and grandson of Louis XIV. The unsuccessful issue of that attempt is related amongst a mass of other glorious successes, under the article *ENGLAND*; and thus the crown of Spain fell to a branch of the house of Bourbon. Philip V. was confirmed king of Spain by the treaty of Utrecht, in 1713. In 1734 he invaded Naples, and wrested that kingdom from the house of Austria, in favor of his second son prince Charles. Philip V. married Mary Louisa, daughter of Victor Amadeus duke of Savoy, by whom he had prince Louis (whom he associated in the throne with him, but who died before him), and prince Ferdinand. His queen dying, in 1713, he married in September 1714 princess Elizabeth Farnese, heiress of Parma, by whom he had prince Charles, Philip duke of Parma, Louis, cardinal of Bourbon, Mary Victoria, queen of Portugal, and Mary Antonietta, duchess of Savoy. He died July 9th, 1746, and was succeeded by his eldest son, Ferdinand VI., who married the infanta of Portugal, daughter of John V., but died without issue, 10th of August 1759, and was succeeded by his half brother Charles III. In consequence of the accession of the house of Bourbon to the Spanish throne, the courts of France and Spain generally acted in the closest concert, till the revolution, which, equally in its origin and issue still astonishes all Europe, put an end to monarchy for a time in the former country. The wars of these two courts with Britain are related under *ENGLAND* and *AMERICA*; and these, with an unsuccessful attempt on Algiers, and the threatened war respecting Nootka Sound, constitute the most important part of the Spanish history till the deposition and murder of Louis XVI. of France. On that event Spain joined her forces to those of the empire, Britain, and Prussia, to chastise the convention, and prevent those democratical principles which had ruined France from being spread through the other nations of Europe. But her exertions added nothing to the strength of the alliance; and, being unable to defend herself against the furious inroads of the republican troops, she was glad to make a separate peace with the convention. Shortly after (Feb. 14, 1797) took place the glorious victory obtained by the British fleet under admiral Jervis, now lord

St. Vincent, over the Spanish fleet, though more than double their number. King Charles III. died in 1789, and was succeeded by his son, Charles IV.

It was easy to foresee that the renewal of the war with France, after the peace of Amiens, would quickly involve Spain. It did so; but it was not possible to foresee the unheard of treachery of Buonaparte, to the royal family and people of Spain. Charles IV. and his queen were sent to reside at Rome, and Ferdinand VII. was long secluded by him from all public notice; until in the month of April, 1812, an artful proposal of peace was made by Buonaparte with England, guaranteeing the independence of Spain, in the present dynasty. It was mildly but firmly answered by the British government, by demanding what was meant by the insidious expression present dynasty; to which no answer was returned. This proposal was in the usual style of his deceptions, previous to the attack upon Russia, which hastened his own downfall.

The history of the peninsular war has been admirably related by a contemporary writer, Dr. Southey: we regret that we cannot find room for an abstract of his luminous view of the state of the peninsula previous to its commencement; nor for several splendid passages which we had marked in his work. The reader, however, will remember that from Spain, in 1808 and 1809, arose the first national resistance to the power of Buonaparte on the continent; and that in the peninsula was fought the opening battles of the civilised world against that despot. It is, indeed, amongst the most wonderful passages of modern history that countries so degraded, as Spain and Portugal at this time were, should thus have aroused the whole of Europe to a successful struggle for liberty—and then again themselves retire into their ancient darkness and chains.

'The circumstances of the resistance,' says Dr. Southey, 'are not less extraordinary than those of the aggression, whether we consider the total disorganisation to which the kingdom of Spain was reduced; the inveterate abuses which had been entailed upon it by the imbecility, misrule, and dotage, of its old despotism; the inexperience, the weakness, and the errors, of the successive governments, which grew out of the necessities of the times; or the unexampled patriotism and endurance of the people, which bore them through these complicated disadvantages. There are few portions of history from which lessons of such political importance are to be deduced; none which can more powerfully and permanently excite the sympathy of mankind, because of the mighty interests at stake. For this was no common war, of which a breach of treaty, an extension of frontier, a distant colony, or a disputed succession, serves as the cause or pretext: it was as direct a contest between the principles of good and evil as the elder Persians, or the Manicheans, imagined in their fables: it was for the life or death of national independence, national spirit, and of all those holy feelings which are comprehended in the love of our native land. Nor was it for the Peninsula alone that the war was waged: it was for England and for Europe; for

literature and for liberty; for domestic morals and domestic happiness; for the vital welfare of the human race. Therefore I have thought that I could not better fulfil my duties to mankind, and especially to my own country, nor more fitly employ the leisure wherewith God has blessed me, nor endeavour in any worthier manner to transmit my name to future ages, than by composing, with all diligence, the faithful history of this momentous struggle. To this resolution I have been incited, as an Englishman, by the noble part which England has borne in these events; and, as an individual, by the previous course of my studies, which, during the greater part of my life, have been so directed that the annals and the literature of Spain and Portugal have become to me almost as familiar as our own.'

We can only further offer from this elegant author a passage respecting the opening scenes, and another describing the first actual efforts of the patriots, at this period.

'The history of Spain and Portugal, from the foundation of their respective monarchies to the middle of the sixteenth century, when both countries attained their highest point of greatness, is eminently heroic, for the persevering spirit with which they warred against the Moors, never ceasing, and scarcely breathing, from the contest till they had finally exterminated them; and for the splendor, the extent, and the importance, of their foreign conquests. Both kingdoms had risen by the same virtues; the same vices brought on the decline of both; and the history of their decline is not less instructive than that of their rise. Their external relations have been widely different; but, notwithstanding this difference, and notwithstanding a national enmity, kept alive rather by old remembrances and mutual pride than by the frequency of their wars with each other, the Spaniards and Portuguese have continued to be morally and intellectually one people. They spring from the same stock; the same intermixture of races has taken place among them; and their national character has been formed by similar circumstances of climate, language, manners, and institutions.

The old governments are called free, like all those which the Teutonic tribes established; but this freedom was little better than a scheme of graduated tyranny, and the laws upon which it was founded were only so many privileges which the conquerors reserved or arrogated to themselves. When the commixture of languages and nations was complete, and commerce had raised up a class of men who had no existence under the feudal system, a struggle for political liberty ensued throughout all the European kingdoms. It was soon terminated in Spain: a good cause was ruined by the rashness and misconduct of its adherents; and the scale, after it had been borne down by the sword of the sovereign, never recovered its equipoise: for the Romish church leagued itself with the monarchical authority, against whose abuse it had formerly been the only bulwark; but, changing its policy now according to the times, it consecrated the despotism whereby it was upheld in its own

usurpations. The effects of this double tyranny were not immediately perceived ; but, in its inevitable consequences, it corrupted and degraded every thing to which it could extend—laws, morals, industry, literature, science, arts, and arms.

' In other countries where absolute monarchy has been established, and the Romish superstition has triumphed, both have been in some degree modified by the remains of old institutions, the vicinity of free states, and the influence of literature and manners. But in Spain and Portugal almost all traces of the ancient constitution had been effaced ; and, as there existed nothing to qualify the spirit of popery, a memorable example was given of its unmitigated effects. The experiment of intolerance was tried with as little compunction as in Japan, and upon a larger scale. Like the Japanese government, the inquisition went through with what it began ; and, though it could not in like manner secure its victory, by closing the ports and barring the passes of the peninsula, it cut off, as much as possible, all intellectual communication with the rest of the world.

' The courts of Madrid and Lisbon were as despotic as those of Constantinople and Ispahan. They did not, indeed, manifest their power by acts of blood, because the reigning families were not cruel, and cruelty had ceased to be a characteristic of the times : but with that cold, callous insensibility, o which men are liable in proportion as they are removed from the common sympathies of human kind, they permitted their ministers to dispense at pleasure exile and hopeless imprisonment, to the rigor and inhumanity of which death itself would have been mercy. The laws afforded no protection ; for the will of the minister was above the laws; and every man who possessed influence at court violated them with impunity, and procured impunity for all whom he chose to protect. Scarcely did there exist even an appearance of criminal justice. Quarrels among the populace were commonly decided by the knife : he who stabbed an antagonist or an enemy in the street wiped the instrument in his cloak, and passed on unmolested by the spectators, who never interfered farther than to call a priest to the dying man. When it happened that a criminal was thrown into prison, there he remained till it became necessary to make room for a new set of tenants : the former were then turned adrift ; or, if their crimes had been notorious and frequent, they were shipped off to some foreign settlement.

' After the triumph of the monarchical power, the cortes had fallen first into insignificance, then into disuse. There was no legislative body ; the principle of the government being, that all laws and public measures of every kind were to proceed from the will and pleasure of the sovereign. Men of rank, therefore, if they were not in office, had no share in public business ; and their deplorable education rendered them little fit either to improve or enjoy a life of perfect leisure. It is said also to have been the system of both governments, while they yet retained some remains of perverted policy, to keep the nobles in attendance about the court, where they

might be led into habits of emulous extravagance, which would render them hungry for emoluments, and thereby dependent upon the crown. The long-continued moral deterioration of the privileged classes had produced in many instances a visible physical degeneracy ; and this tendency was increased by those incestuous marriages, common in both countries, which pride and avarice had introduced, and for which the sanction of an immoral church was to be purchased.

' The armies partook of the general degradation. The forms of military power existed like the forms of justice : but they resembled the trunk of a tree, of which the termites have eaten out the timber, and only the bark remains. There appeared in the yearly almanacs a respectable list of regiments, and a redundant establishment of officers : but, brave and capable of endurance as the Portuguese and Spaniards are, never were there such officers or such armies in any country which has ranked among civilised nations. Subalterns might be seen waiting behind a chair in their uniforms, or asking alms in the streets ; and the men were what soldiers necessarily become, when, without acquiring any one virtue of their profession, its sense of character and of honor, its regularity, or its habits of restraint, they possess all its license, and have free scope for the vices which spring up in idleness. Drawn by lot into a compulsory service, ill-disciplined, and ill-paid, they were burdensome to the people, without affording any security to the nation.

' The state of religion was something more hopeful, though it is scarcely possible to imagine any thing more gross than the idolatry, more impudent than the fables, more monstrous than the mythology of the Romish church, as it flourished in Spain and Portugal. Wherever this corrupt church is dominant, there is no medium between blind credulity and blank, hopeless, utter unbelief : and this miserable effect tends to the stability of the system which has produced it, because men who have no religion, accommodate themselves to whatever it may be their interest to profess. The peasantry, and the great mass of the people, believed with implicit and intense faith whatever they were taught. The parochial clergy, differing little from the people in their manner of life, and having received an education so nearly worthless that it can scarcely be said to have raised them above the common level, were for the most part as superstitious and as ill-informed as their flock. The higher clergy, however, had undergone a gradual and important change, which had not been brought about by laws or literature, but by the silent and unperceived influence of the spirit of the times. While their principle of intolerance remained the same (being inherent in popery, and inseparable from it), the practice had been greatly abated ; and the autos-da-fe, the high festival days of this merciless idolatry, were at an end ; for it was felt, and secretly acknowledged, that these inhuman exhibitions were disgraceful in the eyes of Europe, and had brought a stain upon the character of the peninsular nations in other catholic countries, and even in Rome itself. The persecution of the Jews therefore (which the founder of the

Braganzan line would never have permitted if he had been able to prevent it) ceased; and the distinction between Old and New Christians had nearly disappeared. At the same time an increased intercourse with heretical states, the power and prosperity of Great Britain, and the estimation in which the British character is held wherever it is known, had insensibly diminished, if not the abhorrence in which heresy was held, certainly the hatred against heretics. Thus the habitual feelings of the clergy had been modified, and they were no longer made cruel by scenes of execrable barbarity, which in former times compelled them to harden their hearts. They became also ashamed of those impostures upon which so large a portion of their influence had been founded: though they did not purge their calendar, they made no additions to it; miraculous images were no longer discovered: when a gravedigger, in the exercise of his office, happened to find a corpse in a state of preservation, no attempt was made to profit by the popular opinion of its sanctity: miracles became less frequent as they were more scrupulously examined; and impostures, which, half a century ago, would have been encouraged and adopted, were detected, exposed, and punished. The higher clergy in both countries were decorous in their lives, and in some instances exemplary in the highest degree.

Literature had revived in both kingdoms, and was flourishing, notwithstanding the restraints which the government and the inquisition continued to impose. Few similar institutions have equalled the Royal Academies of Madrid and Lisbon in the zeal and ability with which they have brought to light their ancient records, and elucidated the history and antiquities of their respective countries. There was one most important subject from which men of letters were compelled to refrain—the old free constitution: but it met them every where in their researches; and its restoration was the object of their wishes, if not of their hopes.

The lower classes, who in great cities are every where too generally depraved, were perhaps peculiarly so in Spain, from the effect of what may be called their vulgar, rather than their popular, literature. This had assumed a curious and most pernicious character, arising partly from the disregard in which ill-executed laws must always be held, and partly from the faith of the people in the efficacy of absolution. The ruffian and the bravo were the personages of those ballads which were strung for sale along dead walls in frequented streets, and vended by blind hawkers about the country. In these pieces, which, as they were written by men in low life for readers of their own level, represent accurately the state of vulgar feeling, the robberies and murders which the hero commits are described as so many brave exploits performed in his vocation; and, at the conclusion, he is always delivered over safely to the priest, but seldom to the hangman. Fables of a like tendency were not unfrequently chosen by their dramatists for the sake of flattering some fashionable usage of superstition, such as the adoration of the cross, and the use of the rosary; and the

villain who, in the course of the drama, has perpetrated every imaginable crime, is exhibited at the catastrophe as a saint by virtue of one of these redeeming practices. Such works were more widely injurious in their tendency than any of those which the inquisition suppressed. They infected the minds of the people; and the surest course by which a coxcomb in low life could excite admiration and envy among his compeers was by appearing habitually to set justice at defiance. It became a fashion among some of the higher classes in Spain to imitate these wretches; and, by a stranger and more deplorable perversion of nature, women were found, among those of distinguished rank, who affected the dress and the manners of the vilest of their sex.'

The first general insurrection is thus described:—

'The seizure of the fortresses, and the advance of the French troops, had roused the spirit of the Spaniards; their hopes had been excited to the highest pitch by the downfall of Godoy and the elevation of Ferdinand; and, in that state of public feeling, the slaughter at Madrid, and the transactions at Bayonne, were no sooner known, than the people, as if by an instantaneous impulse over the whole kingdom, manifested a determination to resist the insolent usurpation. Abandoned as they were by one part of the royal family, deprived of the rest; forsaken too by those nobles and statesmen whose names carried authority, and on whose talents and patriotism they had hitherto relied;—betrayed by their government, and now exhorted to submission by all the constituted authorities, civil and religious, which they had been accustomed to revere and to obey;—their strong places and frontier passes in possession of the enemy; the flower of their own troops, some in Italy, others in the north of Europe; and a numerous army of the French, accustomed to victory, and now flushed with Spanish slaughter, in their capital and in the heart of the country; under the complicated disadvantages and dangers, they rose in general and simultaneous insurrection against the mightiest military power which had ever till that time existed; a force not more tremendous for its magnitude than for its perfect organisation, wielded always with consummate skill, and directed with consummate wickedness. A spirit of patriotism burst forth which astonished Europe, and equalled the warmest hopes of those who were best acquainted with the Spanish nation: for those persons who knew the character of that noble people,—who were familiar with their past history, and their present state; who had heard the peasantry talk of their old heroes, of Hernan Cortes and of the Cid;—who had witnessed the passionate transfiguration which a Spaniard underwent when recurring from the remembrance of those times to his own;—his brave impatience, his generous sense of humiliation, and the feeling with which his soul seemed to shake off the yoke of these inglorious days, and take sanctuary among the tombs of his ancestors,—they knew that the spirit of Spain was still alive, and had looked on to this resurrection of the dry bones. As no foresight could have apprehended the kind of injury with which

the nation had been outraged, nor have provided against the magnitude of the danger, so by no possible concert could so wide and unanimous a movement have been effected. The holiest and deepest feelings of the Spanish heart were roused, and the impulse was felt throughout the peninsula like some convulsion of the earth or elements.

The firing on the 2d of May was heard at Mostoles, a little town about ten miles south of Madrid, and the Alcalde, who knew the situation of the capital, despatched a bulletin to the south, in these words:—"The country is in danger; Madrid is perishing through the perfidy of the French. All Spaniards, come to deliver it!" No other summons was sent abroad than this, which came from an obscure and unauthorized individual, in a state of mind that would have made him rush upon the French bayonets; but this stirred up the people in the southern provinces; and in truth no summons was needed, for the same feeling manifested itself every where as soon as the details of the massacre were known, and the whole extent of the outrage which had been offered to the nation. Buonaparte was totally ignorant of the Spanish character, and in that ignorance had pursued the only course which could have provoked a national resistance. If he had declared war against Spain, at the beginning, no enthusiasm could have been raised in favor of the government, and he might have dictated the terms of submission as a conqueror. The opinion of his magnanimity and greatness would have gone before him; the Spaniards, prone to admire what is romantic and miraculous, and taught by their own history to disregard the injustice and the inhumanity of wars which are waged for conquest, had been dazzled by the splendor of his portentous career; and had he appeared to them as an open, honorable foe, the pretension that he was appointed to fulfil the ways of Providence, might have found among them a submissive, and perhaps a willing, belief.

Asturias was the first province in which the insurrection assumed a regular form. A junta of representatives was elected, who assembled at Oviedo, and declared that the entire sovereignty had devolved into their hands. The commander-in-chief in that principality, who attempted to suppress these movements, was in danger of losing his life; and the Conde del Pinar, and the poet D. Juan Melendez Valdes, who were sent by Murat from Madrid to appease the people, were glad to escape from the indignation which their mission provoked. The first act of the junta was to despatch two noblemen to solicit aid from England: they put off from Gijon in an open boat, and got on board an English privateer which happened to be cruising off that port. Agents also were sent to Leon and to Corunna, inviting the Leonese and the Gallicians to unite with them against the common enemy. The Asturian who came to Corunna upon this mission was ordered by one of the magistrates to leave the town immediately, and not to make his errand known to any person, on pain of being arrested and treated as a criminal. On the way back he stopped at Mondonedo, where he learnt that the Leonese were in

insurrection, and met as emissary from that kingdom one of those generous spirits who were then every where employed in rousing the nation, and preparing it for the struggle which must ensue. The people of Mondonedo entered with ardor into the common cause; and a student from the seminary there accepted the office of deputy from that city to Corunna, notwithstanding the risk which the Asturian had run. He went with the fair pretext of asking from the provincial government what course ought to be taken by the authorities at Mondonedo, in consequence of the events in Asturias and Leon. Corunna was in a state of great ferment when he arrived; true and false reports were received with equal belief by the populace; it was affirmed that the sale of church property which Ferdinand had suspended was to be resumed; that Buonaparte would order off all the Spanish troops to the north of Europe, and that cart-loads of chains were on the way to manacle those soldiers who should refuse to march willingly. The captain-general of Gallicia and governor of Corunna, D. Antonio Filangieri, believed that the only course which it behoved him to pursue, in the strange and perilous state of Spain, was to preserve order as far as possible; but the very precaution which he took to prevent an insurrection became the signal for it.

The festival of St. Ferdinand, king of Spain, which is commemorated on the 30th of May, had always been celebrated as the saint's-day of Ferdinand since he was acknowledged as prince of Asturias; and in all fortified towns the flag should have been displayed and a salute fired. Filangieri forbade this to be done, lest it should occasion a dangerous movement among the people. The omission excited them more forcibly than the ceremony would have done: it was a silent but unequivocal act of assent to the iniquitous proceedings at Bayonne; and the people, understanding it as such, collected in great numbers about the governor's house, and insisted that the flag should be hoisted. Filangieri was a Neapolitan, who might have transferred his allegiance from a Bourbon king of Spain to a Buonaparte without any sacrifice of feeling, or violation of duty. His inclinations, however, were in favor of the country which had adopted him, and he obeyed the popular voice. They then required that a regiment which he had removed to Ferrol should be recalled; that the arms in the arsenal should be distributed among the inhabitants; that Ferdinand should be proclaimed king; and that war should be immediately declared against France. The governor demurred at this last demand;—they broke into his house and seized his papers, and his life would probably have been sacrificed if he had not escaped at a garden door, and found shelter in a convent. The multitude then hastened to the arsenal, and took possession of the arms; the soldiers offered no resistance, and soon openly declared for the cause of their country. Some officers who attempted to restrain the people were hurt; some houses were attacked; a warehouse was broke open because it was said the fetters in which refractory conscripts were to be conveyed to France were deposited there; and

the French consul would have been murdered, if some humarer persons had not conveyed him in time to Fort St. Antonio, upon an island in the sea. A portrait of Ferdinand was carried in procession through the streets; and the vivas which accompanied that popular name were followed by a fearful cry of 'Down with the French and the traitors!' But order was soon restored, and in a great measure by the exertions of the clergy, who possessed at this time a double influence over the people, because no class of men displayed more fervor of patriotic loyalty. The heads of the monasteries, and the parochial priests, assembled with the constituted authorities of the town, the regent of the Royal Audience, and the governor, to whom obedience was now restored; they formed a permanent junta of government; they sent officers to treat with the English squadron which was then blockading Ferrol, and they despatched advices to Santiago, Tuy, Orense, Lugo, Mondonedo, and Betanzos, requiring each of those cities to send a deputy to the junta, and make the news known throughout their respective jurisdictions. In the course of three days the whole of Galicia was in a state of insurrection, and a communication was immediately opened with England.

'At Badajoz and at Seville the first popular movements were repressed by the local authorities; but they soon broke out again with renewed violence. The Count de la Torre del Fresno was governor at Badajoz; the people collected before his palace, calling upon him to enrol them, and give them arms for the defence of the country. A second time he endeavoured to control a spirit which was no longer to be restrained; and the furious multitude, who perceived that to remain quiet was in fact to acknowledge the foreign king who was to be forced upon them, considered all attempts to abate their ardor as proceeding from a traitorous intention, forced their way into the house, dragged him forth, and murdered him. For, in the sudden dissolution of government, by which free scope was for the first time given to the hopes and expectations of enthusiastic patriotism, the evil passions also were let loose, and the unreasonable people were sometimes hurried into excesses by their own blind zeal, sometimes seduced into them by wretches who were actuated by the desire of plunder, or of private revenge. Men were sacrificed to the suspicions and fury of the multitude, as accomplices and agents of the French, whose innocence in many cases was established when too late. Such crimes were committed at Valladolid, Cartagena, Granada, Jaen, San Lucas, Carolina, Ciudad Rodrigo, and many other places. But this dreadful anarchy was of short duration. The people had no desire to break loose from the laws and the habits of subordination; the only desire which possessed them was to take vengeance for their murdered countrymen, and to deliver their country from the insolent usurpation which was attempted. If any obstruction was offered to this generous feeling, they became impatient and ungovernable: otherwise, having always been wont to look to their rulers, never to act for themselves, their very zeal displayed itself in the

form of obedience; they were eager to obey any who would undertake to guide them, and no person thought of stepping beyond his rank to assume the direction. Because Ferdinand, when he set out upon his journey to Bayonne, had left a junta of government at Madrid, the people were familiar with that name, and juntas, in consequence, were formed every where; those persons being every where appointed whom the inhabitants were accustomed to respect.'

The issue is well known. A final evacuation of the Spanish territory by the French took place in the western Pyrenees, after the battle of Vittoria, 21st of June 1813; and the eastern Pyrenees in the following spring. Ferdinand VII. was now restored. In the short struggle between Buonaparte and the allied powers, in 1815, Spain entered feebly into the views of the allies; since that period she has been engaged in various unsuccessful expeditions against her insurgent colonies; in a partial civil war in which many political leaders have fallen, or been expelled the country; and finally, with the aid of France, in re-establishing the despotism of Ferdinand on the ruins of all the liberal manners and improvements of the Cortes.

## PART II.

### STATISTICS OF SPAIN.

There is not a country in the world, perhaps, which unites more natural advantages in respect to climate, soil, and variety of productions, extent of the sea-coast, noble harbours, &c., than Spain. As these must ever be of leading interest in this country we begin with her maritime advantages, and shall conduct the reader first round her Atlantic, and then along her Mediterranean shores.

The *north coast* of Spain runs nearly east and west, with no other indentations than a few insignificant bays and rivers. In general the mountains approach the sea, and the coast is of safe approach. The provinces which compose it are Biscay, divided into Biscay Proper, or Senorio, and Guipuscoa, Asturias, and a part of Galicia. The chief head-lands are Cape Machichaco, between St. Sebastian and Bilboa, a high steep point; east of the cape three miles, and two miles from Cape Ogono, a remarkable hanging promontory, is Isaro Island. Cape de las Penas (Scythicum) is named from rocks and shoals lying off it a mile and a half, with, it is said, a safe passage within them; the cape is broad, high, steep, and whitish, and the coast to the east is composed of perpendicular cliffs.

Cape Ortegal (Trileucum), supposed to derive its name from Ort, in the northern dialects a point of land, and Galicia, is nearly the north point of Spain. Point de la Estaca, east of Cape Ortegal, is the absolute north point, being one mile higher in latitude than the cape. Cape Ortegal is one of the extremities of the mountains of Galicia; it is a lofty and steep promontory, off which is a cluster of rocks, called the Farelons of Ortegal, or Aguillones (needles), with a narrow channel in ten fathoms within them. Cape Prior, seven or eight leagues southwest of Cape Ortegal, is a high promontory,

with a low sandy beach at each side, which causes the cape to make like an island. The coast between it and Cape Ortegal has many rocks near the shore. Cape St. Adrian, the extremity of Mount Boa, has off it Cisarga Island, and several shoals with channels between them ; Cisarga Island is a mile and a half long and has fresh water. Cape Villano, or Belem, is a high red mountain, the summit resembling a tower. Cape Toriana, is three leagues south-west of Cape Villano, and two leagues further is Cape Finisterre (Nerium), the west point of Spain, (not the west point of Europe, as it is stated in books of geography, this point being Cape Roxent in Portugal). It is a steep uneven promontory with low land to the north ; off it is the little island Sentolo, with a passage between. Mount Laura is an insulated mountain of a round form, and round which are several reefs and shoals. Cape Corrobeda, the north point of the Rio de Roxo, is the last remarkable point on these coasts. The salient projection of Galicia, being exposed to the constant action of the Atlantic, is more broken than the coasts of Asturias or Biscay ; it is also to be observed that from Cape Finisterre along these coasts a constant current sets to the east, with the velocity of half a mile to a mile per hour, according as the winds are easterly or westerly. The tides on this coast rise fifteen feet in springs, and it is high water at three P. M. on full and change.

The south coast of Spain, without the strait of Gibraltar, is various. From the Guadiana to Palos, eleven leages, it is moderately elevated and even ; from Palos to the Guadalquivir, ten leagues, it is red downs. These coasts form a deep curve, bounded by Cape St. Mary in Portugal on the west, and on the east by Cape Trafalgar. This bend is sometimes called the Gulf of Cadiz, though this name is more generally confined to the Bay of Cadiz. Cape Trafalgar (the promontory of Juno), the outer point of the Strait of Gibraltar, is a little hill rising from a long low point. It is famous for the great naval victory gained by lord Nelson over the combined fleets of France and Spain, the 21st of October, 1805. On this point is a light house. Tariffa point is the south point of Spain. Between it and Cape Trafalgar are several towers to defend little rivers from the landing of the pirates ; and off the point is the island Tariffa, small, round, and even, with a light tower on the north-east. There is no passage between it and the point.

The rivers of Spain, which empty themselves into the Atlantic, are in general insignificant, both as to length of course and volume, but most of them form small ports at their mouths for coasting vessels. The following list is supplied by captain Tuckey :—

Rivers.	Empties at
Bidassoa . . .	Fontarabia.
Urumea . . .	St. Sebastian.
Orio . . .	Orio.
Urola . . .	Zumaya.
Deva . . .	Deva.
Andaro . . .	Andaro.
Lequietio . . .	Lequietio.
Hea . . .	Hea.

Rivers.	Empties at
Mondaca . . .	Mondaca.
Ybaychaval . . .	Bilbao.
Ason . . .	Santona.
Miera . . .	Bay of St. Andero.
Saja . . .	Suances.
Nansa . . .	Barca.
Deva . . .	St. Vincente de la Barquero
Tina del Esta . . .	Between St. Vincent and Llanes.
Tina Mayor . . .	Llanes.
St. Yusti . . .	Niembro.
La Balotta . . .	Bedon.
Llanes . . .	Riba de Sella.
Niembro . . .	Lastres.
Bedon . . .	Linares.
Riba de Sella . . .	Villa Viciosa.
Lastres . . .	Pilas.
Linares . . .	near Gijon.
Villa Viciosa . . .	Abono.
Pilas . . .	Aviles.
Abono . . .	Pravia.
Aviles . . .	Canero.
Pravia . . .	Receida.
Canero . . .	Navia.
Receida . . .	Eo, or Miranda.
Navia . . .	Ribadeo.
Eo, or Miranda . . .	Masma.
Ribadeo . . .	Foz.
Masma . . .	Fasouro.
Fasouro . . .	Junco.
Junco . . .	Mondoneda.
Mondoneda . . .	Villa Velas.
Villa Velas . . .	Landrova.
Landrova . . .	Puerto Barquero.
Puerto Barquero . . .	Del Sor.
Del Sor . . .	St. Marta Carin.
St. Marta Carin . . .	Esteiro.
Esteiro . . .	Jubia.
Jubia . . .	Mendo.
Mendo . . .	Mero.
Mero . . .	Allones.
Allones . . .	Rio de la Puenta.
Rio de la Puenta . . .	Lezaro.
Lezaro . . .	Tambre.
Tambre . . .	Ulla.
Ulla . . .	Arçobispo.
Arçobispo . . .	Rio Roxo.
Rio Roxo . . .	Umia.
Umia . . .	Vedra.
Vedra . . .	Coldelas.
Coldelas . . .	Romalosa.
Romalosa . . .	Minho.
Minho . . .	Guadiana.
Guadiana . . .	Piedra.
Piedra . . .	Odiel.
Odiel . . .	Tinto.
Tinto . . .	Rio del Oro.
Rio del Oro . . .	Guadalquivir.
Guadalquivir . . .	Ratonejo.
Ratonejo . . .	Guadaletti.
Guadaletti . . .	Ponta Vedra.
Ponta Vedra . . .	Nigo Bay.
Nigo Bay . . .	Bay of Bayona.
Bay of Bayona . . .	Guarda.
Guarda . . .	Ayamonte.
Ayamonte . . .	Lepe.
Lepe . . .	Huelva.
Huelva . . .	Palos.
Palos . . .	St. Lucar.
St. Lucar . . .	Bay of Cadiz.
Bay of Cadiz . . .	Strait Maria.

The Bidassoa, which separates France and Spain, must be considered as appertaining to the latter ; for, though the breadth of its entrance between the two shores is two-thirds of a mile, a ledge of rocks runs off from the French shore, so as to leave but a very narrow channel for vessels of 200 tons, close to the Spanish side. In the river nearly at the crossing place from Fontarabia to Andaya on the French side, is a small, barren, and uninhabited island, formerly named the Isle of Pheasants ; but, being the place where the conference was held between

France and Spain, which produced the peace of the Pyrenees, it thence received the name of Isle de la Conférence. The Riba de Sella is a great torrent, emptying itself between two mountains with such velocity during the freshes that it is impracticable. At other times small vessels enter it with the flood. The Miranda, which separates the provinces of Asturias and Galicia, has twenty-four leagues course. The Minho, which on the coast separates Spain and Portugal, has its source in the mountains of Galicia, and derives its name from the quantity of red lead (minium) found on its banks. It is navigable only twelve leagues, and can only be ascended with the tide at flood, the ebb running out with such rapidity as to render it impracticable. Near the south bank is the islet Irfoa, with a Portuguese fort.

The Guadiana (Anas), which also separates Spain and Portugal, rises in the Sierra Morena (Black Mountains); its entrance is crossed by a bar, with eighteen feet at half tide and twenty-four feet at high water springs. This river disappears near Aliczar de St. Juan in la Mancha, and, after running under ground nearly eight leagues, again emerges at some lakes called the Eyes of the Guadiana. At the mouth of this river is Higueroa Island, with the little town of Canels on its west side. The Tinto (Urium) also rises in the Sierra Morena, and has its name from the color of its waters, which are quite yellow. It has also the property of hardening sand in a singular manner; it withers all the plants on its banks, nor will any fish live in it; it is given to animals to kill worms, but no animal will drink of it voluntarily except goats. It loses all these properties when it receives the streams of other rivulets at Niebla, six leagues from its mouth. The Guadalquivir (Boëtis), one of the principal rivers of Spain, has its rise in the Sierra Morena, and a course of 100 leagues. Its mouth is one mile wide, but a sand-bank runs off from each shore, and there are also some rocks which narrow the ship channel to a quarter of a mile. On the west point of the entrance is the tower of San Jacinta, and on the east the castle of Espiritu Sancto. Large vessels ascend to Seville, sixteen leagues from the sea, below which it spreads into a small lake. The system of canals in Spain is merely in embryo; two or three leagues have been completed of one intended to join the Mançanares with the Tagus, to open a communication between Madrid and the palace of Aranjuez. The canal of Castile has been abandoned.

Fontarabia, the first port town of Spain, in the bay of Biscay, is on the left bank of the Bidassoa, half a league from its mouth; it is strongly fortified. Passages, five miles west of the Bidassoa, is the best harbour on the bay for large ships, being an extensive basin, three or four leagues in circuit, surrounded by mountains, and with an entrance only ninety-two fathoms wide, between two great rocky points, so that vessels are in contrary winds obliged to warp or be towed in. A considerable portion of the basin dries at low water, but there is space for a large fleet in six to eight fathoms. The town on the west shore consists only of a single street.

The entrance of the port is defended by the castle of St. Isabel.

St. Sebastian, the chief town of Guipuscoa, is situated on a point of land washed by the little river Urumea (Mencœuin) on the east, and by the sea, which forms a cove, on the west. On Mount Agudo, the west point of the cove, is a light-house. The river Urumea, which washes the walls of the town, receives vessels of fifty to sixty tons with the tide, and has a good salmon fishery. In the cove to the west is a haven formed by two moles, where twenty-five to thirty vessels find space, but lie dry at low water. Nearly in the middle of the entrance of the cove is the lofty island of St. Clara, with a hermitage dedicated to this Saint. The passage is between this island and the peninsula, on which is the town, and which terminates on a lofty hill named Mount Orgullo (Orgueil), on which is the castle of La Mota. The town on the isthmus is surrounded by a rampart flanked by bastions and half moons, and is commanded by La Mota, the ascent to which is by a spiral pathway. The commerce of St. Sebastian is considerable, exporting iron, anchors, cables, leather, and wool.

Orio has a small tide haven for vessels of twelve feet: vessels of considerable size are built here, and the hulls sent to Passage to be equipped. Zarauz, a village, to the east of which is a little islet and shoals. Descargo and Guetaria are fishing towns; the latter has 300 inhabitants, and is on a cove, which, together with the lofty rock or islet of St. Antonio, joined to the main by a pier 400 feet long, forms a little dry tide haven. Zumaya, on the river Urola, that admits only small craft over a bar, has considerable iron foundries, the iron from which is sent to St. Sebastian. Deva, on a river which admits vessels of fifty to sixty tons at high water over a bar. Motrico, a pier haven on a cove used by vessels of 100 tons. Andaro or Ondarroa, on a little river that receives vessels of fifty tons. Lequietio, also on a river, receives vessels of 100 tons, which lie dry at low water. Before it is the island of St. Nicholas, left on the right in entering. The town and river of Hea is only frequented by fishing boats, it is two miles and a half east of Cape Ogono. Monsfons is on a river that receives vessels of 100 tons. Mondaca River forms a dry tide haven within two piers. Bermeo, on the west shore of a large cove, has a pier tide haven, and before it is the isle of St. Francisco. Placentia, west of Cape Machichaco, is on the Durango, whose bar is practicable for vessels of fifty tons with the flowing tide. Portugalete, a small town on the left bank of the Ybaychaval, half a mile above the bar, which almost crosses the river, leaving only a narrow and shifting channel practicable with the flowing tide towards the west shore.

Bilboa, the chief town of Biscay, is on the right bank of the river, two miles above Portugalete; it is celebrated for its fine climate and agreeable situation. Its trade is considerable in the export of wool, iron, chestnuts, and oil. The English chiefly take of the wool 50,000 bags, valued at 5,000,000 of piastres; the iron is sent to Corunna, Ferrol, and Cadiz, for the use of the naval arsenals; the chestnuts to England and the north.

Here is a royal administration of marine, a school of coasting pilotage, and several building yards. To Bilboa succeed the small towns of Somorrostro, Onton, Castro-Urdiales, and Orinon; the two first are on creeks, which only admit small craft at high water. Castro is on the west point of an open bay, the bottom of which is foul, except near the shore, where three or four vessels may find clear ground. At the head of the bay is a pier dry tide haven for coasters. The harbour of Santona is one of the best of the north coast of Spain for middling sized vessels, but is little frequented. On the east shore of the entrance is the town of Laredo, with a pier haven for small craft; the village of Santona is on the opposite side, a mile up a small river. The entrance is defended by several batteries.

St. Andero is one of the most considerable towns in population and commerce of the north provinces of Spain. It is on a bay, bounded on the east by the island of St. Marino; and between this island and the head of the bay, where is the town, are the islands Moro and Letorre, and the great perforated rock Orodada; besides the outer harbour there is a pier haven at the town, where small vessels lie at a quay. The channels in it are defended by two castles and several batteries. The town is built on an eminence. Before the war it had forty-two national and eighteen French and English commercial houses, and it was the residence of the foreign agents, charged with the commercial relations of the ports of Biscay in general. Its exports are wool to England and France, iron, flour, and colonial produce, having the privilege of trading directly to the colonies, for which in 1803 forty-five vessels cleared out, and whence, in the same year, thirty-seven entered. St. Martin, four leagues west of St. Andero, is a small tide haven for fishing-boats. St. Vincente de la Barquero has a haven for vessels of twelve feet, with two channels in, formed by the little island Callo.

Llanes a small dry tide-haven. Riba de Sella, already noticed, is only a tide-haven. Lastres River admits only vessels of forty tons. Villa Viciosa, on a point between two little rivers, and three miles from the sea: the entrance is crossed by a bar, admitting only vessels of twelve feet with the flood. Sanson, a little tide haven on the west side of the long point of Tassones, on which is a castle. On the east side of the point is an islet with anchorage under it.

Gijon, a trading town of about 3000 inhabitants and fourteen commercial houses, has a good road and a dry tide haven within a pier, at the mouth of a river, for vessels of twelve feet. It is protected by a castle. The exports are chestnuts, filberts, and walnuts, to England and the north; mill-stones from some neighbouring quarries, and cyder to the Spanish colonies. Torres, a fishing village, a league west of Gijon. Candas and Luanco, are on small coves, where the fishing-boats lie dry at low water. Aviles, three leagues S. S. W. of Cape de las Penas, is on a point of land formed by the curve of a river; it has 3,000 inhabitants, chiefly fishermen, and a dry tide haven for their barks. It is defended by Fort St. Juan. The river Pravia is dangerous, and only visited by small coasters. Luarca,

on a river that admits vessels of ten feet. Four miles west of it is the island Romanilla de la Vega, before the harbour of Vega, to which succeeds the tide haven of Navia, where is some trade. Via Veles, Porcia, a little tide-haven seldom visited. Castropol, on the right bank of the Miranda. Ribadeo, on the left bank of the Miranda, is built on an eminence; vessels of seventeen feet enter the river, and make fast with a cable to the shore: the castle of St. Damien, on the west shore, defends the port. Santa Marta and Carin are in the bay between Point de la Estaca and Cape Ortegal. The river of the former receives vessels of ten feet; the latter is practicable for larger vessels with the tide. Cedreira, south of cape Ortegal, has a good, though small port, for vessels of burden. Corunna, or the Groyue, is a celebrated port formed by a semicircular basin, two miles wide at the entrance, and two leagues deep; but has only a confined space of deep water, sheltered from the north and north-west winds. North of the town one mile is the tower of Hercules, an elevated building on a hill, which serves as a light-house, and may be seen twenty leagues. At each point of the harbour is a castle, St. Martin and St. Clara. The town, containing 4000 inhabitants, is built on the south point of the entrance, and is composed of the old and new quarters; the latter, on the declivity of a hill, is surrounded by a wall and has a citadel. The haven, which has a handsome quay, alongside of which vessels lie, is commanded, as well as a part of the road, by the forts of St. Antonio and St. Amaro; the former, on a steep rock, serves as a state prison. Opposite the town is an island with a castle. Here is a royal tribunal of commerce, fifty-eight commercial houses, and most of the trading nations have consuls here. The first of every month a packet sails for the Canaries, Porto Rio, Cuba, and Vera Cruz; and the fifteenth of every second month one sails for the river De la Plata. Port Santa Cruz is only fit for fishing craft; it is under the mountain of Pennaboa, one mile and a half from Hercules's tower. The harbour of Cumilla is also only used by fishing barks: it is on the north side of cape Villano. Camarina Bay, on the south side of cape Villano, has good anchorage. The town of Camarina is on the north shore, and that of Mugia, or Monsia, on the south: the former has a fishing pier-haven, which dries at low water; the bay is defended by a fortress on a point.

The fishing town and pier-haven of Finisterre is half a league north-east of the cape. The town of Corcubion on a bay farther east, and that of Cé on the same bay, are small places; but the bay is fit for the largest ships, with the wind from the north, southerly winds throwing a great sea in and rendering it dangerous. Muros Bay has good anchorage. On the north shore is the town of Muros; and at the head of the bay, Noya on the Tambre. Between Muros bay and the Rio de Roxa are the islands Besones. Rio de Roxa, or Arosa, is a deep inlet, two leagues wide at the entrance, but filled with rocks. The islands Presciras and Salvora lie before it; the latter rises to a high hill. There are several fishing villages on this inlet, but no town.

Ponte Vedra Bay is separated from the Rio de Roxa by a peninsula, and before its entrance is the island Ons, three miles long, north and south, with a channel on either side for the largest ships ; it is uninhabited, but has two springs of good water, and the people on the main send some horses to graze on it. On the south shore of the bay is port St. Marino, and at the head is Ponte Vedra, an agreeable town of 2000 inhabitants, on a hillock, washed by the little river Vedra. It has a considerable fishery of sprats.

Vigo Bay is separated from Ponte Vedra by a tongue of land : it is two miles wide at the entrance, across which lie the two isles of Bayona, sometimes called Seyas de Bayona and Estellas (Insula Dies). The northernmost and largest is three leagues long north and south ; the southern two miles. They have fresh water, and pasture some cattle : the channel between them is filled with rocks. The town of Vigo is on the south shore of the bay, built on a rock, surrounded by a wall flanked by four bastions and commanded by a castle. Its population is 2500 ; but though vessels of the largest size may lie secure in any part of the bay up to Redondela, a league above Vigo, it has little trade, exporting only some cured sprats and tunny-fish. The bay of Bayona, south of Vigo Bay, is nearly crossed by a bank, on which are two islets ; and off cape Fasalis, the south point of the bay, is Lobos (wolves) reef. Bayona is a fortified town and castle at the foot of a high mountain. South of the bay is the fortified monastery of Oya, intended to afford protection to vessels chased by the Barbary pirates. Guarda, on the Spanish bank of the Minho, two miles within its mouth, is a fortified town, with a pier-haven for small vessels. Gayon is three leagues above Guarda, and two leagues higher is Tuy (Tyde), a strong town within cannon-shot of the Portuguese fort of Valença.

Now we arrive at the western coast of Portugal ; and do not resume the Spanish coast and ports until we come to Ayamonte, on the Spanish bank of the Guadiana, a considerable fishing town. Lepe, on the right bank of the Piedra, receives small vessels, but the access is difficult. Taran, Port St. Michael (Menestheus), Huelva (Onoba) on the Odiel, and Palos on the Tinto, are of little note, except the latter, which derives an historical celebrity from being the place of departure of Columbus on his first voyage, which produced the discovery of America. St. Lucar de Barromeda, on the left bank of the Guadalquivir, two or three miles from its mouth, is a small town and the port of Seville. Ships of fifteen feet lie afloat before it at all times. Seville (Hispalis et Julius Romula), sixteen leagues above St. Lucar, is built on a plain, surrounded by a high wall flanked with 166 towers, all built of a cement which has acquired the hardness of stone. The streets are narrow and crooked, but the houses in general well built. Though its commerce has been reduced, by the transfer of the colonial trade to Cadiz, it still exports to the value of 60,000,000 reals.

Cadiz (Gades, founded by the Phœnicians) is considered the first commercial city of Spain, and is situated at the end of a peninsula, forming

the north extremity of the isle of Leon. On the west and south it is defended by nature, the shore being so steep, lined with rocks, and furiously beaten by the waves, as to render a landing impossible. Towards the road, on the north, the depth of water is not sufficient to allow its being attacked by heavy shipping, and on these sides it is surrounded by a wall flanked with bastions. Its only vulnerable point is, therefore, at the isthmus on the east, and this is crossed by regular fortifications, in which there is but one gate, and four towards the water. Cadiz is the chief place of one of the maritime divisions. The naval arsenal, called the Carraca, is situated on the south shore of the inner road six miles from the city. It has three large docks and twelve building places, and employs 5000 workmen. Previous to the latter wars with England, Cadiz had lately 720 mercantile houses, of which 100 were foreign, viz., English, Dutch, French, and German. In 1791 1010 vessels entered as follows :—

Spaniards . . .	339*	Swedes . . . . .	25
English . . .	180	Ragusans . . .	24
French . . .	116*	Genoese . . . .	6
Portuguese . .	104	Venetians . . .	2
American . . .	90	Hamburgers . . .	1
Dutch . . .	80	Imperials . . .	1
Danes . . .	41	Trieste . . . . .	1

The town of the isle of Leon, two leagues east of Cadiz, has 40,000 inhabitants ; and nearly adjoining it has been laid the foundation of the town of St. Carlos, the plan of which is perfectly regular, and it is intended to contain the marine hospital, barracks for the workmen, academy, &c. The Isle of Leon (thought to be Tarshish and Tartessus) is separated from the main by the channel of St. Pedro, three leagues in length, with twenty-four feet water, and crossed by a bridge. Puerto de Santa Maria, on the guadalete, four miles and a half from Cadiz, is a well-built town of 12,000 inhabitants. Vessels of nine feet enter the river at low water. Cadiz, having no good water, is supplied from hence by vessels constructed on purpose, and the annual expense of which is said to be nearly 100,000 piastres. Puerto Real, on the north shore of the inner road of Cadiz, has 10,000 inhabitants. Near it are extensive salt-works, which afford 21,300,000 quintals of salt annually. Conil, a fishing village two leagues north-west of Cape Trafalgar, has anchorage before it in ten to twelve fathom.

The Spanish coast of the *Mediterranean*, from Gibraltar to Malaga, presents a chain of lofty mountains, Sierra de Vermeja, &c., but has few points of note. Cape Sacratif, east of Motril, is a high point. The gulf of Almeria is limited on the west by point Elena, on which is a castle, and on the east by Cape de Gatte (Charidemum), a high steep rocky promontory, with a lighthouse. These points are seven leagues asunder.

The bay of Carthagena (Virgitanus) is between Cape Tinoso on the west, on which is port Tri-

\* Of which 177 were from the colonies. In 1801 the number entered from the colonies was only twenty.

nidad and a light-house, and off it two large rocks, called the Osmigas and Cape Palos (Schombraria) on the north. From this latter cape a narrow neck of land runs nearly due north, which, though now joined to the cape, is called Isle Grossa, and within which the coast forms a bend, making a kind of lagoon, named Mar Menor, (little sea), twelve miles long, and five wide, with several islands, but so shoal as only to admit boats. Between Cape Palos and Alicant the land is high, and the water deep close to the shore. On this part of the coast is the lagoon of Mata, separated from the sea by a high narrow bank, and towards the land bounded immediately by high mountains. A great quantity of salt is formed in the lagoon by natural evaporation, 100,000 tons of which have been, in some years, exported to Holland, the Baltic, and England.

The bay of Alicant (Illicitanus) is limited on the south by Cape Santa Pola, and on the north by Cape de la Huertas. South-east of the former two miles is the little island Plana (low), or new Tabarca, which latter name it received in consequence of Charles III. having assigned it as an asylum for a number of Spanish galley slaves, whom he ransomed from the Algierines, at the island of Tabarca, on the coast of Barbary, with the intention of forming a port within the Plana island; but it being a barren sand, destitute not only of wood and water, but even of earth or stone, the project fell to the ground. The channel between the island and the main has depth for the largest ships; but in it is a dangerous rock, and others off the island to the south-west and south. The ancient castle of the duke of Arcos is a little south of Cape Santa Pola. The island of Benidorme lies off a mountain cape of the same name, the southern limit of Altea Bay. West of the village of Altea is a hill, with a remarkable large gap, called Chuchillado de Roldan. The gulf of Valencia is limited on the south by a great projection of the coast opposite the island of Iviça, of which Cape Martin is the northernmost and most conspicuous point. It is the ancient Artemisium, Tenebrium, and Ferraria, the first of which names it received from a large town near it, on the site of which Denia now stands; and the two latter from the iron mines in the vicinity. The name of Artemisium is still preserved in Artemus, given to the cape by the natives. That of Cape Martin has been given it by the French; but it is generally known to English seamen by that of Emperor's Point. It is a high steep headland, with three lights or fire-beacons on it; and a high island, Pityusa, Isle of Pines, close to it. Between it and Cape de la Nao, on the south, is a deep bay, whose shores are composed of huge cliffs of limestone and alabaster, and where is seen a vast cavern, the retreat of innumerable wild pigeons. These capes terminate a sierra, one of whose summits, named Manger, rises to a very elevated peak. The Albufera of Valencia is a lake of fresh water, four leagues long and two broad, separated from the sea by a narrow sand-bank, through which a channel has been cut to let off the occasional superabundant waters. This bank, named

the Dehesa, is covered with pines and willows, and abounds with rabbits. The lake has depth for small boats, is full of fish, and the resort of great numbers of sea-birds; the catching and shooting of which is one of the winter's amusements of the inhabitants of Valencia. This lake is the property of the crown, and is farmed for 12,000 piastres per annum.

The Ebro has formed at its mouth two peninsulas, and several banks and islands. The southern peninsula bends round and encloses the port of Alfaques, whose entrance is from the south, and which has a depth of five to seven fathoms. As the stream of the Ebro, during a great part of the year, runs out with a velocity that precludes the ascent of any kind of vessel, it has been proposed to enlarge the canal, from the port of Alfaques, at Saint Carlos, to Emposta, on the Ebro, so as to admit large vessels through the port of Alfaques to Tortosa. The northern peninsula, formed by the mud of the Ebro, encloses the port of Fangal. Between Tarragona and Barcelona, the coast rises in peaks, named the hills of Graff; and, farther north, the lofty and solitary mountain of Montserrat presents its sharp points, and is seen even from Majorca and Minorca, a distance of fifty leagues.

The Bay or Gulf of Roses is sheltered from all winds but south-east. Cape Creus, the last remarkable promontory of Spain, is a terminating point of the Pyrenees, whence its ancient name of Pyrennæum; it was also called Aphrodisium, from a temple of Venus, of which there remains no vestige. It is a high cape with a light. Nine miles farther north-west is Cape Cervera, the last point of Spain.

On the coasts of Spain, both within and without the Strait of Gibraltar, are a great number of towers (torre) and little fortresses (castella), to protect the coast against the depredations of the Barbary pirates. The towers have circular fronts towards the sea, with low parapets to work the guns (en barbet), with a curtain, and two flanking bastions in the rear; the only entrance is by a door, near half way from the top, and through which the rope ladder that serves to ascend is drawn up.

The vicinity of the mountains to the Mediterranean coast of Spain cause most of the rivers to partake of the nature of torrents, which are much swollen in the winter and spring, and very low in the summer. They are in succession—Guadiaro (Barbasula), which empties itself east of Gibraltar. Guadalnarza and Rio Verte, between Estapona and Marbella, off the Rio Verte, are two small islands, with good anchorage within them. Gordo and Real Guadaira, between Marbella and Malaga. Guada-Medina, at Malaga. Frio empties itself east of Velez Malaga. Adra, at Adra. Aquas at Mujacar. Guadel-macer or Almanzora, whose entrance is defended by the castle of Montroy. Rio Segura, at Guardamar, Alcoy, at Gundia. Xucar, at Cullera. Guadel-aviar, clear water (ancient Turia), at Valencia. Palancia, at Murviedro. Servol, at Vinaros. The Cenia separates Valencia and Catalonia. Ebro (Iberus), the greatest river of Spain, having a course of 380 miles, rises in the mountains of Asturias. Francoli, at Tarragona; its waters

are famous for the lustre they give to the linen washed in them. Gaya, at Vendrell. Foix, at Cubellas. Lobregat and Besos, at Barcelona. Bellet, at Santa Pol. Tordero, at Pals. Ter (Sambroca): before the river's mouth are the three islands Medos des Estardes, the largest of which is one mile and a half long, and has a fort. Lobregat (Rubricatus), and Fluvia, into the Bay of Roses.

*Port-Towns.*—Algeziras (Tingentera and Julia Traducta), on the west shore of Gibraltar Bay, is a small fortified town at the mouth of the little brackish river La Miel. It receives its fresh water by an aqueduct of hewn stone from the distance of a quarter of a league. Its trade is confined to receiving a few cargoes of brandy and corn by Catalonian vessels, and to the export of charcoal of the neighbouring mountains to Cadiz. A packet-boat sails twice a week hence to Ceuta. Off the town a mile is the little island Palomas, covered by a fort, whence the town derives its name, signifying in Arabic an island.

The celebrated rock of Gibraltar, the ancient Calpe, is a peninsular mass of mountain three miles long, north and south, and one mile broad. Its highest point is 1439 feet above the sea, and commands a view of forty leagues in every direction. See GIBRALTAR.

Estapona is a town on the beach, off which vessels anchor; about sixty small vessels belong to it, employed chiefly in carrying fruit to Cadiz and Malaga. Marbella, at the foot of a hill, has 1100 inhabitants, and twenty small craft also employed in the coasting trade to Cadiz, Malaga, Ceuta, &c. Fiangerola, a fortification on the side of a hill, of Roman foundation, and of Moorish superstructure; at its foot is a small town, whose inhabitants are employed in the sardine and anchovy fishery.

Malaga, on the Guadalmadena, founded by the Phœnicians, by the name of Malochi, from the quantity of salt-fish sold here, is a large city, and built at the foot of a hill, surrounded by a double wall, flanked with high towers, and commanded by a Moorish castle on a rock. The cathedral is said to be as large as St. Paul's, and it has besides fourteen parish churches and twenty-two monasteries and convents, a handsome custom-house, a royal marine arsenal, and many Roman antiquities. It has only a pier-haven in the mouth of the river for vessels of nine or ten feet, larger ones being obliged to anchor in the road much exposed. It is the third commercial city of Spain, exporting chiefly the produce of its soil and fishery: viz. wines, dried fruits, oil, and anchovies. Its manufactures of any consequence are silk, thread, hats, soap, and paper. In 1789 100 English ships entered and ten French. It has about twenty merchant brigs and snows belonging to it, and in 1804 had sixty commercial houses.

Velez (old) Malaga, a handsome little town east of Malaga, though formerly on the beach, is now a league from it, the sea continually retiring from this part of the coast. It exports some fruits to Malaga, by a village on a deep cove before it. Almunecar (Manoba), an insignificant place on a cove, before which is an

island with a fortified tower. Salobrén, a small town where coasting vessels load fruit; off it is an island with a passage within it in fourteen fathoms. Motril, a small town two miles from the sea, on the river Orgiva. Castel de Ferro, on a hill close to the sea, exports some wool coastwise. Adra (Abdera), on the river of the same name, is a small place.

Almeria (Murgis), at the head of a large bay, was anciently the most commercial city of Spain, but at present is insignificant both as to population and trade, its exports being confined to some barilla and lead. Mujacar is an insignificant town, and Almazaron, a village with an island before it, on which is a light-house, and a fortified town, on the west side of the cove.

Carthagena (Carthago Nova), founded by Asdrubal the Carthaginian general, is one of the three royal ports. Its harbour is one of the best of Spain, being a natural basin surrounded by hills; the entrance is defended by two redoubts, and by a battery of twelve guns on a mole. The marine arsenal is spacious, and protected by forty guns towards the water. It employs 6500 men, and the population of the city is 28,000. The principal exports are wool and barilla. A great quantity of rope and cables is made here of the Esparto rush. Cervera is a small town, south of the cape of the same name. Guardamar, at the mouth of the Rio Segura, exports salt. La Mata, a small town, near the lagoon of the same name, defended by a castle, where a number of small vessels load salt.

Alicant (Lucentum), the fourth commercial city of Spain, is situated in the northern extremity of a bay, at the foot of a hill, on whose summit is a castle, commanding the town and communicating with it by a passage between two walls. It has only a pier haven for small craft, large vessels being obliged to anchor out in the bay, three miles from the town, in seven fathoms. Alicant is the entrepot of the commercial productions of Valencia and Murcia, consisting of soap, wine, wool, fruit, salt, barilla, kermes, anniseed, antimony, alum, vermillion, &c., which are exported by 800 to 900 ships annually. Benidorme, a large and handsome fishing village, and Altea Nuova and Altea Vieza, on the left and right banks of a river, are villages which export coastwise some wines, silk, flax, and honey. Cabea or Xavea, on a large cove, with anchorage in twelve to fifteen fathoms. Denia (Artemisium and Dianium), founded by the Marseillais in honor of Diana, is a small town, north of cape Martin, and on a cove, in which large ships anchor in six and seven fathoms. It has also a pier-haven for vessels of eight or nine feet. Oliva, a town a mile from the shore. Gandia, a town on the Alcoy, whose mouth forms a port, called the Grao de Gandia. Cullera, a small town on the north bank of the Xucar, visited by small craft chiefly to load rice.

Valencia, surnamed the handsome, although, according to the description of it by travellers, it little deserves this name, the streets being narrow, crooked, not paved, and the houses ill-built and dirty. It is surrounded by a rampart, and has a citadel of little strength. Its population is 105,000, of which, before the French in-

vasion, 2610 were priests, monks, and nuns. It is situated on the right bank of the Guadalaviar, three leagues from its mouth. Sailing vessels cannot ascend the river, but anchor on the road, called Grao de Valencia, before the river's mouth, where they are entirely exposed, nor has it even a commodious landing place; nevertheless it exports the productions of which Valencia is the dépôt, and which are the same as those exported from Alicant. The Grao village is also frequented for sea-bathing. The principal trading nations have resident consuls at Valencia. It has extensive manufactures of silk.

Murviedro is a town on the right bank of the river of the same name, or Palencio, a league from its mouth. It is surrounded by old Moorish walls, whence is derived its name (Muros Viejos), and stands on a part of the site of the ancient Saguntum, a quarter of a mile from the sea; the streets are narrow and dark, but the suburbs well built. The citadel, which still retains the name of Sagonta, occupies the entire summit of a high rock: it is surrounded by modern walls, and has besides some Moorish fortifications and Roman antiquities; in the centre is a covered cistern 200 feet long, twenty wide, and still eighteen deep, though half filled with rubbish. At the foot of the rock are the ruins of the Roman theatre worthy of particular notice. The Grao, or road of Murviedro, is entirely open, and the bottom foul. Its trade is confined to the export of some brandy coastwise. Peniscola is in an open bay in which ships anchor in ten fathoms. Benicarlo, a fishing town one league and a half west of Peniscola, is celebrated for its wines.

Vinaros, a league from Benicarlo, on the Servol, has a considerable coasting trade, its chief export being brandy. Vessels of fifty tons enter the river, but no foreign vessels are permitted to load here. San Carlos, in the port of Alfaques, was founded in 1792 by the crown as a fishing station, and principally built at its expense. It consists of one wide but short street, the houses uniformly have only one story. Amposta is on the right bank of the Ebro, four leagues from the sea and two leagues from St. Carlos, with which it communicates by a canal.

Tortosa (Dertosa), on a hill on the Ebro, two leagues above Amposta, has a handsome cathedral, and an old castle a mile square. Its exports are confined to dried fish and barilla. Lorpagne, a neat little town on a hill, with a haven formed by two piers: it exports some wine and brandy coastwise. Balaguer, a castle on a hill overlooking the sea, and defending a pass in the mountains, called the Col de Balaguer. Cambrils is a neighbouring town on a little river. Salo and Villa Seca, small towns which export some brandy coastwise.

Tarragona, on a rocky eminence, near the left bank of the Francoli, a quarter of a league from its mouth. It is surrounded by ancient Roman walls of immense strength, and defended by two castles. The cathedral is a magnificent structure. A new port was formed to receive large vessels in 1800, and it has an administration of marine. Tarragona is supposed to have been founded by the Phœnicians 2000 years before

the Christian era; its Phœnician name of Tarcon was corrupted by the Romans into Tarraco. Under the latter it was the capital of Hispania Citerior, and, according to some historians, contained 2,500,000 inhabitants. Between 467 and 1713 it sustained ten regular sieges, and was several times taken and the inhabitants put to the sword. In 1807 it was besieged by the French, and after an obstinate defence capitulated; but the French soldiers commanded by Suchet, deservedly surnamed the Butcher of Tarragona, committed as great cruelties as if the place had been taken by assault, massacring the defenceless inhabitants without regard to age or sex. It exports a considerable quantity of grain, wines, and brandy. In 1805, 208 square rigged and 1506 lateen rigged vessels entered the port, of which number 1515 were Spanish. Taran, Vendrel at the mouth of the Gaya, Cubellas on the Foix, are insignificant. Villa Nuova, a small town on the beach, before which vessels anchor in seven to nine fathoms. It has no haven, and the small craft belonging to it are hauled on shore. Sitgas, a mile inland, has a cove before it.

Barcelona, the second city of Spain in population and commerce, has 160,000 inhabitants, and is situated on a bend of the shore, between the Llobregat on the south and the Besos on the north. Its port is formed by a mole on the north-east; on whose extremity is a light-house. Within the mole the depth is but eight feet, and is daily diminishing by the sand thrown into it from the sea, the mole preventing any off-set. The mud of the Besos and Llobregat also form banks before the entrance; vessels of burden are therefore obliged to anchor in the roads one mile and a half from shore, and entirely exposed to the sea. The streets, though it has some good ones, are in general narrow and crooked, paved with large flat stones, and badly lighted. It is strongly fortified on the land side by ramparts and bastions supported by extensive outworks. Mount Jouy, a strong fort on a hill to the south-west, commands the port and town, a part of which latter is also commanded by a citadel surrounded by a ditch on the north-east. The usual garrison is from 5000 to 6000 men. Here is an administration of marine, and a large military arsenal called the Tersana, in which is a foundry of cannon. Barcelona had before the wars an active and passive commerce, to the amount of £1,500,000 sterling. The number of vessels that entered and sailed was nearly 1200, of which the common proportion was 500 Spaniards, 200 French, 150 English, sixty Danes, forty-five Dutch, and 300 of all other nations. The town possessed about 100 square-rigged vessels. The commercial nations have resident consuls here. The chief exports are wine, brandy, wool, cork, fruits, and silk. The manufactures are more flourishing than in any other city of Spain: they are silks of all kinds, coarse woollens, cottons, window-glass, paper, hats, gauze; all of which are exported to the colonies, as well as shoes, of which Barcelona supplied 700,000 pairs annually, valued at 2s. the pair. Barcelona is said to have been founded by the Carthaginians, who gave it the name of their general Hannibal Barcino. Between 802 and 1714 it sustained

eleven sieges, and was seven times taken. The new town of Barcelonette, on the south-east, may be considered a suburb of Barcelona: it is an exact square with twenty-four streets, each twenty-five feet wide, and crossing at right angles. The houses are of brick, uniform, and with each twenty-five feet front. It is inhabited almost entirely by persons employed in marine affairs. From Barcelona to the north the shore presents a quick succession of small towns and villages, of which the principal are San Andria, Badelona, Mongat at the foot of a hill, on whose summit is a castle. Masnou, Premire de Baix, Velazer de Baix; all these places have manufactures of iron and brandy, which they export coastwise. Mataro, a town four leagues and a half east of Barcelona, has a good trade, exporting chiefly its own manufactures of soap, brandy, silks, cottons, linens, sail-cloth, lace, &c. It has an administration of marine, and a constant garrison of two squadrons of cavalry.

From Mataro to the frontiers of France there is no town of any consideration. The principal places in succession are Arens de Mar, St. Maria de Mar, Canet de Mar, St. Pol de Mar, on the little river Bellet; all places which have manufactures of anchors, brandy, silk, and cotton stockings, which they export to the neighbouring ports and to Roussillon and Italy. Callela is beautifully situated and neatly built; Pineda, Malgrat, and Tordera, on the left bank of the little river of the same name. Blanes has some tanneries, Tosa a village built on a steep hill projecting into the sea, which shelters its cove from all winds but south-west. St. Feliu de Guixol. Palamos has a small pier-haven for craft on the south side of Cape St. Sebastian: Pals, at the mouth of the Tordero, Ampurias (Emporæ) on the Fluvia. Roses (Rhodes), on the north side of the Bay of Roses, is a village of one street, defended by two forts. Puerto del Trinidad, Cadaques, a small town with a large and safe port. Selva de Mar, or Selva Baxa, west of Cape Creus, is a town of considerable size. Villa Mana de Llansan, the last town in Spain, is situated on a small creek, which penetrates into a beautiful valley.

Few historical notices of the commerce of the northern part of Spain occur before the fourteenth century: then we learn that it exported wool northward. At present it only exports the productions of the mines and soil, viz. iron, wool, chestnuts of Biscay, and filberts of Asturias; Galicia having nothing to export but a small quantity of anchovies, which are taken from Vigo, Ferrol, and Corunna. The iron goes from the ports of Biscay principally to England. The wool is collected at Burgos, and thence transferred to the ports of Biscay, whence it is sent chiefly to England, Holland, and France, to the amount of 80,000 quintals. The value of the chestnuts and filberts sent to England and the north is about 400,000 reals. The imports of these provinces (chiefly from England, Holland, and France) are fine woollens and linens, hardware, salt butter, salted cod, and fish oil. The ports that have a direct foreign trade are St. Sebastian, St. Andero, Laredo, and Bilbao, Luarca and Cudillera, Corunna and Vigo.

Biscay Proper, with respect to its commercial privileges retained from ancient times, forms a kind of separate state from the rest of Spain, paying no duties on exports or imports, and consequently having neither custom-houses nor custom-house officers. The frontiers are, however, strictly watched, to prevent the clandestine introduction of merchandize through this province into the others. In consequence of this exemption from duties, which the Biscayens are obstinate in preserving, they are prohibited the commerce with America.

Spain had formerly very considerable fisheries on the coasts of the ocean, 1,000,000 of persons, according to Spanish writers, being at one period employed in this branch of industry. They have, however, been long reduced to insignificance; for, though the fish still continue to visit these coasts in such abundance that it is often sold by cart loads for a mere trifle, industry and capital are both wanting to elevate the fishery as an object of national riches. The import of salt cod from England is estimated (for the whole of Spain) at 3,000,000 of duros; the Newfoundland cod being preferred to the Norwegian, and the attempts made to substitute the fish taken on the coasts of Biscay and Asturias have been without success. The rivers of these coasts are also so abundant in salmon, that in the Urumea in particular it is sold for four quartos, or three farthings, the pound. Spain has long ceased to have any foreign fisheries.

In the fourteenth century the Spanish marine, both with respect to war and navigation, held the first place in Europe, and the names of Columbus, Magellan, and Mendana, will live for ever in the page of history with that of our immortal Cook; but the naval glory of Spain disappeared with her invincible armada, and, under the three first Philips and the second Charles, she had neither ships nor seamen. During the war of the succession a transient activity was observed in naval affairs; and, in the two last reigns, considerable efforts have been made to revive the military marine. At the conclusion of the war of 1761 the fleet consisted of thirty-seven ships of the line and thirty frigates. In 1770 fifty-one of the line from 112 to fifty-eight guns, twenty-two frigates, and twenty-nine lesser vessels. In 1774 sixty-four of the line, of which eight were three-deckers, twenty-six frigates, and twenty-seven smaller vessels. In 1778 sixty-seven of the line, thirty-two frigates, and sixty-two small vessels. At the end of 1793 the numbers were,

70 Ships of the line, from	112 to 54 guns.
46 Frigates . . . . .	42 . . 18
3 Sloops . . . . .	20 . . 18
16 Xebecs . . . . .	36 . . 14
13 Bilanders . . . . .	20 . . 10
28 Brigantines . . . . .	24 . . 10
12 Ourques . . . . .	40 . . 20
4 Galleys . . . . .	3
4 Galliots . . . . .	3
3 Bombs . . . . .	10
8 Packets	
7 Schooners	
2 Fire-ships	

The number of sea officers, in the year 1798, was,

- 2 Captains-generals or admirals.
  - 24 Lieutenants-generals or vice-admirals.
  - 41 Commanders of divisions or rear-admirals.
  - 52 Brigadiers or commodores.
  - 118 Captains of ships of the line.
  - 175 Captains of frigates.
  - 251 Lieutenants of ships of the line.
  - 233 Lieutenants of frigates.
  - 231 Alferez (ensigns) of ships of the line.
  - 304 Alferez of frigates.
  - 308 Cadets or midshipmen.
- 

1739

All the subordinate officers rise to the rank of captains of ships of the line by seniority, as well as merit and interest. There is also a corps of pilots having rank as officers. It is composed of four classes, chief pilots, second pilots, coasting and harbour pilots. The chief pilots are divided into two classes, and seem to answer to masters in the English navy, the second pilots to second-masters and masters' mates. This corps has a particular commandant at Cadiz.—Its number in 1798 was 464. Attached to the marine are also corps of engineers, artillery, and infantry. The corps of engineers consists of forty officers. Its chief has the rank of a flag officer, and the others rank with the sea officers according to their classes. The artillery is composed of sixteen brigades, viz. six at Cadiz, six at Ferrol, and four at Cartagena, at each of which ports it has a resident staff. The strength of this corps in 1797 was 2611. The infantry or troops of the marine consists of twelve battalions, four at each royal port: its strength 12,384.

The seamen for the fleet are raised by inscription in classes. 55,000 to 60,000 are registered, but of which not above 40,000 could be levied.

The civil administration of the marine, answering to the English Navy Board, is stationary at Madrid. It consists of an inspector-general, usually a flag-officer, three indentants, viz. one for each royal port, always a flag-officer, a chief contador for each of the ports, who has the victualling department, and two treasurers or pay-masters at each port. The subordinate officers, clerks, &c., in this department, make the whole number amount to upwards of 500 persons. The principal civil officers of each port are a chief engineer, who superintends the works carrying on in the dock-yards; and a commandant, charged with their police. The total number of persons employed in the three naval arsenals exceeds 20,000, including 4000 to 5000 galley slaves employed as laborers. Each arsenal has a naval hospital and a marine academy.

The materials for her navy which Spain possesses at home are oak timber, iron, and hemp; the latter, which was formerly procured from the north, being now furnished by Granada, Arragon, and Navarre, and of it the cordage and sail-cloth are made. A great quantity of cordage is also made of the esparto rush; the cables of this substance, having the property of floating, are peculiarly adapted for anchoring over a rocky bottom. The copper of Mexico and Peru is used for sheathing the Spanish ships. A number of

ships are also built at the Havannah of the cedar of the country.

The *interior* of Spain is composed of a series of elevated tracks of great length, or of a number of mountain terraces, running principally from east to west, which constitutes its principal geographical feature. The Pyrenees, its north-east barrier, are, in a sense, continued through the north of Spain, in the great Cantabrian chain, running parallel to the Bay of Biscay. Near the middle of this range, in long.  $4^{\circ} 15'$ , W., breaks off a secondary chain, stretching southward to Cabo de Gata in Granada. This chain is often called the Iberian; from it four greater mountain ridges traverse the country to the shores of the Atlantic, the valleys between each watered by a great river which absorbs the lesser mountain streams. These rivers are from north to south the Duero, the Tagus, the Guadiana, and the Guadalquivir. In a very different quarter (the north-east) the Ebro receives the waters flowing on one side from the Pyrenees, on the other side from the Iberian range. The interior of Spain (comprising part of Old and New Castile) is an elevated table land, containing several towns, at a height above the sea not usual in the rest of Europe. Thus Madrid is 2200 feet, and St. Ildefonso no less than 3800, above the level of the sea, being the most elevated royal residence in Europe.

Toward the sources of the Tagus the Iberian ridge sends off a branch which, stretching in almost a southern direction, separates La Mancha from the province of Múrcia, to the west of the town of Albacéte, and rises into the lofty mountains of Alcaráz and Segúra (the ancient Oros-peda), dividing the waters between the Guadalquivir and the Segúra, the two main streams which severally and finally convey them to the ocean and the Mediterranean. One of the two great limbs which terminate the Iberian ridge runs into the sea at the Cape Cervéra; the other, bending to the south, skirts the kingdom of Granada, and disappears at the Cape Gata. To the latter belongs the mountain Cabezo de María, between Cartagena and Cape Gata, one league west of the town of Vera on the coast of Valencia. It rises 2287 yards above the sea, and has its summit covered with snow during one-half of the year. Smaller branches of this chain project between the Túria and the Cabriel, which loses itself in the Xúcar at Cofrentes. A ridge runs between the last mentioned river and the Alcoy, another stream, which flows into the sea near Gandía. A minor chain separates the Alcoy and the mouth of the Segúra. The province of Valencia is, in fact, divided by mountains into most fertile stripes, watered by numerous streams, and enjoying every blessing which nature grants to the most favored climates.

The mountains on the right of the Xúcar, from Cofrentes to the sea, bear the appellations of Cortes de Pallás and Milláres. To the left of the same river the mountains are known by the names of Torres and Dos Aguas, which they change for that of Monte Caballón when they penetrate into Valencia from the province of Cuénca. The rock on which the castle of Montserrat stands, near the sea-shore, five leagues

west of the lake Albufera, may be considered as belonging to this ridge. The castle is 313 yards above the sea. From the mountains of Millares to the right of the Xucar another ramification projects between the provinces of Murcia and Valencia. Before reaching Villena it bends towards the sea, on the left of the Alcoy, where it is known by the name of Sierra de Mariola. The number, purity, and copiousness of the streams, which are fed by these hills, render them a main source of wealth and comfort to the country. The highest summit of this ridge is called Moncabré. Another arm stretches from Villea, in which we find the Sierra de Viar, the rock of Xixóna, the mountain of Aytana, and the pyramidal mountain of Mongo, near the Capes San Antonio and Martin. The longer duration of snow on its top makes Cavanilles believe that it surpasses Moncabré in height. The southernmost part of the chain, which strikes off at Villena, yields its waters to the stream of the Segura. The interior of Spain, hot in summer, is liable to piercing winds, and is unsuitable to the production of various fruits which thrive in Italy in more northern latitudes. In no country does the temperature vary more according to the wind; for the low-lying districts in Andalusia, Murcia, and part of Valencia, are often visited by a scorching wind from Africa called the Solano, and very similar in its effects to the Sirocco of Italy and Greece. The elevation of a great part of Spain renders it difficult to make use of its rivers either for irrigation or navigation; so that a soil which, when watered, is highly fertile, is often left in a dry and parched state. Of the various canals projecting from time to time, the only one hitherto turned to much account is that of Arragon. The canal of the river Manzanares is of use only for bringing provisions to the capital.

The roads in Spain are difficult by reason of the unevenness of the surface; they are good only between Madrid and a few large towns. The cross roads are in general so bad as to necessitate the carriage of most commodities on the backs of mules and horses. In the time of the Romans the Ebro is said to have been navigable up to Logrño, a distance of sixty-five leagues inland. The emperor Don Alonso, in the twelfth century, ordered galleys to be sunk near Zaragoza, as a defence against the Moorish navy. Zurita relates that, in the fifteenth century, king Don Juan sailed down the Ebro from Navarre into Arragon. We find, however, the Cortes of the latter kingdom, under Charles II. of Spain, towards the end of the seventeenth century, deliberating upon plans for expediting the navigation of this river near the sea. A survey was made for the purpose in 1738, but with no practical result. The grand canal of Arragon was at length begun under Charles III., the grandfather of the present king; and were it completed it would be a splendid monument of the national spirit. The little that exists of the canal of Arragon might, if we believe Antillon, compete with the works of ancient Rome; but, instead of reaching the sea through the Ebro, and terminating in an artificial harbor, as was intended, it has been carried on for the space of eighteen leagues only

and contributes but little to the internal navigation. Whether it is more favorable to agriculture, by the copious irrigation which it affords in its course, is, we find, a point in dispute. Jovellanos, in his *Informe sobre la Ley Agraria*, mentions the farmers' complaints against the canals for irrigation; all land owners, within a certain distance, being forced to pay a tax for irrigation, whether they have or not the means, or skill, to avail themselves of the benefit. The farms, for instance, near the canal of Arragon, from Zaragoza to Sástago, pay one-fifth of their corn, and one-seventh of all other produce for irrigation.

Spain, abundant in mountain ridges, is naturally rich in minerals; and the iron works of Biscay, Arragon, and Asturias, have been of great note for centuries. In the other provinces the iron has not as yet been wrought to any extent; and the gold mines of Spain are to be traced only in the writings of the ancients. Of silver there is only one modern mine at Guadal-canal in Extremadura. The basis of great part of the mountains is calcareous, and the rocks, composed chiefly of varieties of marble and limestone, abound, like those of similar compositions in other countries, in caverns. Precious stones are found on excavating particular spots; and there are indications of coal mines in various parts, though they are wrought only in Asturias. Salt forms one of the chief products; but it is procured only by evaporating sea-water, a process to which the climate of Spain is favorable.

As to its *agriculture* wheat is cultivated in all the provinces of Spain; maize also is general; rice is adapted to the low marshy tracts; barley and oats to the dry and elevated. Speaking generally, the degree of productiveness depends on the extent of irrigation: when that is effectually performed, the crops, of whatever kind, seldom fail in so favorable a climate. In the low-lying grounds the harvest generally takes place in June: manure is applied, not to corn lands, but to gardens and melon grounds. The Spanish hemp and flax are both of the best quality, and might, were their culture extended, be made the basis of very extensive manufactures. The barley is in general good, and the inferiority of the wheat is owing only to a defective system. Oats are raised in small quantities, and only for the food of horses and mules; barley mixed with straw is the more general food of these animals; hay is not made in Spain. Grain is separated from the straw, not by thrashing, but by the old practice of treading out by cattle; a method less exceptionable in a dry than in a moist climate. The necessity of importing corn at all arises clearly from the want of easy communication between the provinces, as we learn from official authority that the average crops amount to more than 70,000,000 of quintals by weight. In the kingdom of Arragon there is an annual surplus of 388,000 cahices (2 910,000 bushels) of corn.

In Granada coffee, cotton, sugar, and cocoa, are raised to an extent limited only by the want of capital. Vines are cultivated in every province; in the south-west, near Xeres, are made the well known sherry and tent; in the south and east the Malaga and Alicant wines. The vintage in the south of Spain takes place a

month earlier than in France, viz. in September and October; but the raisins or dried grapes are gathered in June. The other fruits are equally rich; olives, oranges, lemons, almonds, and in the warmest provinces the pomegranate and the palm. The kitchen gardens are chiefly cultivated by irrigation, the water being raised by a wheel: the common products are onions, garlic, melons, pumpkins, and cucumbers. Instead of butter the Spaniards use olive oil, which, from mismanagement in the manufacture, is less pure than that of France or Italy, though the fruit from which it is made is superior.

Cultivation of every kind is as yet very backward. Catholic superstition maintains undivided sway, and the observance of an absurd number of holidays has perpetuated indolent habits, and made the inhabitants of many fertile districts confine their labor to the mere supply of their wants. Corn, from the badness of the roads and the want of canals, may be dear in one district and cheap in another. The purchase made for the granaries is seldom to an extent sufficient to meet the wants of a bad season. Catalonia, since increasing its manufactures and its population, has been supplied with provisions not from the back provinces so much as from other countries. Of the domestic animals of Spain the cattle are less numerous than the wants of the country require, or the extent of pasture in the higher grounds would afford the means of rearing. Mules are in general use for travelling; and, as to horses, the famed breed of Andalusia is degenerating and very limited in number.

One cause of the backwardness of Spanish agriculture, and of the productive industry of Spain in general, is the loss of time in church holidays. A minor cause is the distance of part of the cultivated lands from the dwellings of the peasantry, the latter living not in detached houses, but in villages. There is also a general complaint of want of hands in Spain; the church having absorbed in its monasteries, as well as in its less humble functions, many who might have been useful as cultivators or manufacturers. A further loss is sustained by the undue proportion of lawyers, students, and genteel professions; while of the lower classes, an extra number become men servants, and the lowest of all are not ashamed to go a begging. It is supposed that the agriculturists, who in France form two-thirds of the population, do not in Spain exceed one-third. Add to this, as further discouragements of agriculture, the prohibitions on the export of corn, the injudicious taxes, the difficulty of procuring water during the summer; the vast hereditary properties, and the right vested in the church and certain large sheep owners. The latter have a right and deed, that of the Mesta, of driving large flocks at certain seasons over the entire soil. Bodies of about 10,000 sheep are conducted from province to province in the spring by about fifty shepherds, under the charge of a mayoral or officer of responsibility. The progress of such numerous flocks is necessarily slow, a journey of 400 or 500 miles requiring thirty or thirty-five days. It is usual to shear the sheep by the way, in the large buildings called Esquileios, erected for that purpose. In autumn a similar journey

is requisite, to bring the flocks from the high ground to the plains. Migrations of so frequent occurrence, and to so great an extent, necessarily required specific regulations, and gave rise to the Mesta, an association authorised by government to decide all questions between the shepherds and the farmers through whose lands the migrations take place. Such questions are decided by special courts, who perform a kind of circuit for the purpose. Of the propriety of law and regulation on such a head there can be no doubt; but great exception is made to several of the existing enactments, such as, that no land that has been once in pasture shall be cultivated until offered to the Mesta at a certain rate; that a road of 240 feet in width shall be left in the cultivated fields, &c. The number of migratory sheep is necessarily various: of late years it has been computed at 5,000,000. The quality of the Spanish wool has long been celebrated; but it is not clear that that of the migratory sheep surpasses that of the others.

*Trade and manufactures.*—In a country abounding with fine wool, and not deficient in provisions, flourishing manufactures might be expected; but such are the effects of misgovernment that Spain is obliged to import part of her broad-cloth, flannel, and serges, from England and France. In like manner, notwithstanding the productive iron mines of Biscay, she imports great part of her hardware; so that if we except Catalonia, where both silks and cottons are made, the only manufactures conducted with spirit in Spain are the twisting of silk, the tanning of leather, and the working of Sparto or Esparto grass (Spanish broom) into mats, baskets, and shoes.

In the middle ages the *commerce* of Spain with foreign countries was confined to a few towns of importance, as Venice, Genoa, Ghent, and Bruges. The discovery of America opened a prospect which would have been eagerly embraced by an active people: in the hands of the Spaniards, it was soon miserably cramped by the spirit of monopoly. Confined at first to Seville, transferred to Cadiz after 1720, and relieved from part of its absurd restrictions in 1739 and 1764, it was at last thrown open, after 1778, to a number of the chief sea-ports. This was productive of the best effects, and the mercantile shipping of Spain received a considerable increase; but the trade in question never acquired an importance to be compared to that of England with the United States. The Spanish Americans were indolent, had few wants, and but limited means. Part of their imports were long supplied by the English from Jamaica and Trinidad, and a farther part from the United States; and now, that the shackles of monopoly are definitively broken, there seems little doubt the chief supplies will be received direct from England.

The trade of Spain with England, France, and the Netherlands, comprises a variety of articles both of export and import: with other countries it is less varied. From the Baltic the imports are corn and naval stores; from Greece, the coast of Africa, and the Euxine, they are in general confined to corn. The exports consist chiefly of wool, wine, brandy, fruit, olive oil,

silk, salt, and barilla. All these, but in particular wool, salt, fruit, and wine, form exports to England. In return, the chief imports are woollen cloth, hardware, and cottons from England; linen from Germany and Ireland; woolens, jewellery, and paper, from France; and salt fish from England and Newfoundland. The intercourse between Spain and Britain would have been much greater, had not the transfer of the crown of Spain to a branch of the Bourbons produced a political jealousy and consequent connexion between Britain and Portugal. The total value of exports from Spain in 1792 was computed at £7,000,000 sterling; and it probably has in no year exceeded £8,000,000 or £9,000,000, equal to about a third of those of France, or a sixth of those of Great Britain. The principal sea-ports are Cadiz, Barcelona, Cartagena, Malaga, Alicant, Corunna, Bilboa, and St. Sebastian. The proportion of foreign trade carried on in Spanish bottoms was altogether insignificant, until 1778, and since then it has not been large, the Catalans and Biscayans being almost their only navigators. Mercantile questions are in general decided by special courts, like the tribunals of commerce in France.

'In 1802,' says a Spanish history of the late war, published in 1808, 'the produce of our industry was calculated at 350,000,000 francs; but it was soon reduced to much less in consequence of the maritime war (with England) and the malversations of the prince of the peace. The effects of these checks were the more felt, as the remittances from the American colonies were inadequate to cover the deficit. Our industry in 1808, represented by the amount of its produce, was to that of France nearly as seven to forty. Our commerce in 1802, soon after the peace of Amiens, was to that of France as two to three—such, at least, is the result of the statistical documents published by the continental powers at that period. But according to the more accurate estimate presented to government by Mr. Canga Arguelles, in 1803, the proportion was that of twenty-eight to 182, which, in fact, differs but little from the preceding.'

'When Great Britain declared against us, in the following year, our commerce, which was just beginning to recover from the losses of the past war, may be said to have received its death wound. Our mercantile companies, then the most powerful in Europe, were ruined by the general stagnation of trade, by the large and frequent loans made to a government who never paid either interest or principal. The Philippine Islands Company, whose funds were immense, failed to the amount of 6,000,000 (of francs). The deputation of the five Gremios of Madrid, well known to all Europe for its credit and wealth, was ruined, partly by the inactive state of our industry, partly by the financial operations of our ministers. Neither the national bank of San Carlos, which opened with a capital of 75,000,000 (of reals, about £7,500,000 sterling), nor the Royal Maritime Company, created in 1789, could realise their objects, or even preserve their funds, which were soon drained, to fill the strong chests of the favorite, or spent in

France for the support of armies which were, at no distant period, to be employed against us.'

'The failure of remittances from Spanish America, the enormous subsidies which we paid to France, and the ruinous measures by which the annual deficits were met, exhausted the treasury, and put an end to public credit. No funds were safe from the hands of the favorite. The capital of the bank, that of the Monte de Piedad, the judiciary deposits, the pauper's fund,—all was seized by servile ambition, that it might support injustice and prodigality. The plans of internal navigation were forgotten, the public works then in progress were suspended, and those that had been concluded were left to decay for want of means to repair them. The government, wholly intent on guilty schemes of momentary advantage, not only neglected the country whose interests it was their duty to promote, but actually increased the obstacles which were opposed to her industry. Custom-houses were found in every direction, the roads were crowded with revenue officers, and tolls were levied at every step, upon travellers. The merchants were compelled to make declarations injurious to their interests; and, when they had gone through ten thousand vexatious forms, they could not yet feel secure, or beyond the reach of the fiscal vultures.'

The Roman Catholic, we need hardly add, is the only religion tolerated in Spain. The inquisition was introduced soon after 1492, to watch over and eventually to clear the kingdom of the Jews and Moors. In the sixteenth and seventeenth centuries it found means to extend its power over the Christian sectaries; but in the eighteenth it became little else than an engine of police. It was abolished by Buonaparte, but restored by Ferdinand in 1814: in 1820 it was abolished, until, on the return of the blessed Ferdinand, it was re-established by acclamation! Its judges in former ages were chiefly Dominican monks; they in modern times have consisted of regular clergy, with a certain proportion of laymen. The property of the church was one of the earliest objects of attack on the part of the Cortes in 1820, and with reason; for, though the conduct of many of the clergy was exemplary, the division of income was so unequal, that while several prelates, such as the archbishop of Valencia, had an income of £20,000 sterling, and the archbishop of Toledo three times as much, the lower clergy lived in a state of poverty. They were besides far too numerous; for, while the prelates of Spain consisted of eight archbishops and sixty-one bishops, the minor clergy were not short of 40,000, distributed throughout 18,871 parishes. In addition to these, 2000 monasteries contained nearly 50,000 monks; and 1075 convents, about 20,000 nuns. Part of these monasteries and convents are now (1821) abolished, and the inmates allowed a small pension for life, government having appropriated their lands to the public treasury. The direct taxes paid by the clergy were insignificant; but the dues raised on church property, in the shape of first fruits (annates) and temporary vacancies, were inconsiderable. The clergy were amenable, not to civil courts, but to those of the bishops;

and the appeals from the latter lay to a court at Madrid, in which the papal nuncio was president.

The *universities* of Spain, formerly twenty-four in number, have been progressively reduced to eleven, and of these, few are well conducted. The antiquated system of logic, and other parts of scholastic philosophy, continued to be taught until the middle of the eighteenth century, when the government, roused by ridicule at home, and the example of improvement abroad, at last prescribed alterations, which, however, still leave the Spanish universities greatly behind those of France, Germany, or Great Britain. In most of the monasteries are schools instituted for the education of the monks, but open to youth generally. The instruction given there is replete with superstitious notions. Of the various schools of the kingdom unconnected with monasteries, many are conducted on a plan less exceptionable, but still far from corresponding to the general advancement of the age. Madrid has a public library of fully 100,000 volumes; and there are collections on a smaller scale in other cities; but as yet, at least, they are greatly deficient in good modern publications. Spain appears to have had very little national literature until the reigns of Charles V. and Philip II., a period still cited as its golden age, but evidently overrated, its eminent writers having been few, and the succeeding centuries (the sixteenth and seventeenth) having been avowedly feeble, without any cause of decline. At last, in the middle of the eighteenth century, the government and a small but distinguished body of individuals, became conscious of the national inferiority, and began to labor for the diffusion of improvement. Still good books in the Spanish language are not many, but they date in general from that period. The basis of the Spanish language is the Latin, with a mixture of Celtic, and, in the southern provinces, of Arabic. It is sonorous and harmonious, pronounced almost literally as it is written, and is a fine language, when exhibited without that tendency to amplification, so common among Spanish writers. Of the fine arts, the Spaniards have been most successful in painting and architecture.

The judges of petty offences in Spain are the alcades, officers corresponding to the justices of peace in Britain, or more properly combining the functions of the French mayor and judge of the peace. Next come the corregidores and alcades mayores, a class whose jurisdiction is somewhat more comprehensive, but still limited to a district, and subject to revision by the audiencias, or great courts, whose jurisdiction is extensive, and whose decisions can be reversed only in Madrid. These audiencias are established in a number of the principal towns, such as Seville, Granada, Valencia, Barcelona, Saragossa, Valladolid, Oviedo, Corunna, Caceres in Estremadura, and Palma in the island of Majorca; to which are to be added, the council of Navarre, and the council of Castile at Madrid, the latter forming, like the court of cassation in France, the final judicature, or court of appeal for the kingdom. The *alguazils*, like the constables or bailiffs in Britain, are officers charged with arrests and the

pursuit of thieves. In general the administration of justice in Spain is defective, less from want of integrity or ability in the individuals, than from the retention of pernicious forms. A class of agents called *escribanos*, or writers, were, until the late revolution, alone entitled to receive depositions, rejoinders, or other papers relating to a process; and, by a singular usage, the defendant was obliged to employ the same agent as the plaintiff. This absurd practice, and the power of the agents to choose their court, when there happens to be two courts in the district, was long the subject of complaint. Another peculiarity in the administration of justice in Spain was the number of special courts, such as those for church affairs, for military, naval, mercantile, or even medical questions, all founded on a proper principle, but suspected, from their imperfect constitution, of partiality to the particular class, at the expense of the public. A more substantial ground of complaint lies in the great distance to which, in this thinly peopled country, a person was often obliged to travel, before reaching a court.

Spain is divided into eleven military governments, viz. Madrid, Old Castile, Arragon, Catalonia, Valencia, Murcia, Guipuzcoa, Andalusia, Galicia, and Estremadura. Each of these had, before the late revolution, a governor or captain-general, and each is divided into several smaller governments. The army consists of cavalry, infantry, and artillery, and is at present (1821) about 50,000 in number. The guards or household troops have been, since the late revolution, assimilated to the rest of the army, while the Swiss regiments have been disbanded, and a number of the soldiers re-enlisted in Spanish regiments. There is also a national militia, liable to serve when called out by the executive power. The strength of the Spanish army has varied greatly of late years: its general character is courage in the lower ranks, and a want of professional knowledge in the higher. There are artillery schools in several towns, such as Segovia and Alcala de Henares; but the instruction is antiquated, and in general the education of Spanish officers is so imperfect, that a great proportion of their superior officers for ages have been foreigners, Germans, Italians, and Irish. The war ended in 1814 left with them a number of British officers. The young men of family in Spain, though by no means deficient in courage, seldom choose the army as a profession. They do so far less generally than those of Germany, France, or even England. The result is, that the far greater number of officers serving in the Spanish army have been raised from the ranks, thus forming a new obstacle to the admission of men of family, in a country where it is disreputable for the latter to associate with the untitled class.

The revenue of Spain arises chiefly from taxes, but in some measure also from the royal domains, and from the crown and chancery dues. The latter include the fees payable by persons on their instalment into certain offices, or on the receipt of certain titles. The taxes consist, as in the other countries of Europe, of the customs, the excise, the post-offices, and the government mo-

nopolies, the chief of which are salt, tobacco, lead, gunpowder, and cards. Among the principal imports is a tax of two per cent. on Spanish, and three times as much on foreign articles, whenever they change hands; a tax which, impolitic as it is, is levied without abatement on those commodities which go through several stages of preparation. Thus, tallow is taxed first when sold by the butcher, and afterwards when made into candles. The alcabalas, or alcavala, is that portion of this tax which falls on furniture. It is nominally fourteen per cent.; and, though not collected at a rate of more than six or seven per cent., it is equally pernicious as the tax of five per cent. on the sale of land and houses in France. Among the farther taxes are the millones, or impost on hearths and spirituous liquors, at first a free gift, but perpetuated by royal edict; and the crusada, arising from the sale of indulgences to eat meat on certain fast days, a tax of no slender amount in so bigoted a country. These various collections are effected by a number of agents, far greater than we are accustomed to in England; and, though the salaries of the individuals employed are low, the per-cent-age, or general rate of the collection, is very heavy. The revenue derived from the American mines, though far less than was vulgarly supposed, was not inconsiderable; but after 1810, or rather after 1814, Spanish America became a source of expenditure; and at present the revenue from this quarter may be considered as definitively lost. All the finances of Spain have long been in a state of disorder, and the public funds at a great discount.

In 1817 the net amount of revenue was about £6,000,000. The expenditure was computed as follows:—

Army and ordnance . . . . .	£3,500,000
Navy . . . . .	1,000,000
Administration of justice, and other provincial charges . . . . .	1,250,000
Interest of the public debt and treasury charges . . . . .	1,150,000
Civil list . . . . .	550,000
Foreign department . . . . .	150,000
Bounties . . . . .	100,000
All other charges . . . . .	300,000
<hr/>	
	£8,000,000

The actual expenses of the year proved, however, somewhat less, and the deficit did not exceed £1,200,000.

Spain was long a limited monarchy, the people being represented by their cortes, an assembly which, though rude, and constituted on principles very different from those of true representation, performed the duty of guarding the public purse, and of making known the public grievances. But after the Union in the fifteenth century of the different provinces into one kingdom, the concentration of power in the executive branch enabled the latter to dispense with the cortes, and to encroach on the privileges of the provinces; so that, on the accession of the house of Bourbon, in 1700, there remained hardly any vestige of independence, except in Biscay. The title of the king of Spain is that of Catholic majesty; the heir apparent is prince of the Astur-

rias; the other princes of the royal family are called infants, the princesses infantes. It is a remarkable fact in the history of Spain that its rulers, since the earliest records, have been foreigners, or of foreign extraction. The chief council of state, prior to the revolution of 1820, was the chamber of Castile. It was vested with great powers, and in several respects represented the regal office. The cabinet is composed, as in the other kingdoms of Europe, of a minister for each important department, viz. the treasury, the foreign affairs, the army, the navy, the administration of justice, and the home department. The body called council of state has been, since the beginning of last century, little more than honorary, the title of member of this council being granted, like that of minister of state in France, to persons of rank who have held a high office, such as that of intendant of a province, or viceroy in the colonies. The king was grand master of the four military orders of Calatrava, Alcantara, Santiago, and Montesa, and the affairs of these associations were administered, until the changes introduced by the late revolution, by a special council called the council of the orders. Colonial affairs were committed to the management of the council and chamber of the Indies, resident at Madrid.

Ceremonial is an object of great attention with the Spaniards: the right of standing covered in the presence of the king, enjoyed formerly by all who were above the common class, was confined, after the accession of Charles V. to the imperial crown, to the titulados.

In Spain, as in Germany, there prevails a great deal of aristocratic pride, and a scrupulous distinction of classes. The nobility, as in Britain, bear the titles of duke, marquis, or count, and are styled collectively, titulados. The gentry are called hidalgos. But these points of etiquette differ materially in different provinces. In Estremadura they are little attended to, while in Biscay and the Asturias almost all the inhabitants lay claim to rank. A more substantial privilege, that of entailing their estates, possessed formerly by all persons of good family, was in a great measure abolished by the revolution; the number of these entails (mayorazgos) being one of the chief causes of the backward state of the country.

The different provinces of Spain have as little connexion, and almost as little similarity of character, as those of the Austrian empire, as Bohemia, Hungary, and Carinthia. The characteristics most general are a degree of stateliness or gravity, and the more important quality of sobriety, both in eating and drinking. Their backwardness in military affairs arises from want, not of courage, but of activity, and a tardiness in adopting improvement. Indolence is the vice of the inland and southern provinces; it may in fact be termed the vice of the nation, though striking exceptions are found, above all, of Catalonia. Towards strangers the Spaniards are in general reserved; in society they are much otherwise. Their dress, formerly national and peculiar, is now similar to the fashions of France and England: the men, however, still occasionally wear the cloak and slouched hat; the women dress frequently in black, with white veils. The mode

of entertaining is not by dinners, but by evening parties, where the refreshments presented are very slight. The higher ranks keep a number of domestics, who, having little to do, are almost entirely lost to productive labor. In their dwellings the great object of the Spaniards is to exclude the heat; and, as few precautions are taken against cold, winter, though comparatively short, by no means passes with impunity. Religious processions in the true Catholic style are still common in Spain, and are the object of devout attention. The well known national amusement of bull-fighting was discouraged by government in the end of the eighteenth century, but has since been revived: the national dances, the *Bolero* and *Fandango*, are still performed as in former ages.

The exaggerations in regard to the wealth and population of Spain in former ages, are to be attributed partly to the Arabic, and partly to the

The Spanish population, in the year 1788, was thus exhibited: it may serve us to contrast to the more recent tables.

#### BISCAY.

Alava . . . . .	71,399
Guipuzcoa . . . . .	120,716
Lordship of Biscay . . . . .	116,042
	308,157
Arragon . . . . .	623,308
Catalonia . . . . .	814,412
Asturias . . . . .	347,776
Galicia . . . . .	1,345,803
Estremadura . . . . .	416,922

#### ANDALUSIA.

Kingdom of Seville . . . . .	754,293
Kingdom of Cordova . . . . .	236,016
Kingdom of Granada . . . . .	661,661
Kingdom of Jaen . . . . .	177,136
Sierra Morena . . . . .	7,918
	1,837,024
Kingdom of Murcia . . . . .	337,686
Kingdom of Valencia . . . . .	783,084
Kingdom of Navarre . . . . .	227,322
Mancha . . . . .	206,160

#### NEW CASTILE.

Jurisdiction of Cuenca . . . . .	266,182
Jurisdiction of Guadalaxara . . . . .	144,370
Jurisdiction of Toledo . . . . .	334,425
Province of Madrid . . . . .	58,943
City of Madrid . . . . .	156,672
Arunjeuz, royal demesne . . . . .	2,65
Le Pardo, royal demesne . . . . .	611
	933,865

#### OLD CASTILE.

Jurisdiction of Avila . . . . .	115,172
Jurisdiction of Burgos . . . . .	465,410
Jurisdiction of Old Castile . . . . .	74,669
Jurisdiction of Segovia . . . . .	167,525
Jurisdiction of Soria . . . . .	170,565
Jurisdiction of Valladolid . . . . .	196,839
S. Ildefonsa, royal demesne . . . . .	4,331
The Escorial, royal demesne . . . . .	2,453
	1,196,964

#### KINGDOM OF LEON.

Jurisdiction of Leon . . . . .	250,134
Jurisdiction of Palencia . . . . .	112,514
Jurisdiction of Salamanca . . . . .	210,380
Jurisdiction of Toro . . . . .	92,404

665,432

10,143,075

early Spanish writers. They remained uncontested until the latter part of the eighteenth century, when Capmany and a few other writers began to open the eyes of the public. Successive wars in the interior, from the eighth to the fifteenth century, necessarily retarded the increase of both wealth and population, leaving the boasted Spain of the age of Charles V. and Philip II. far inferior to that of the present day. Her influence on the foreign politics of that age was owing entirely to the weakness of other states, as was sufficiently proved by the limited force which she employed in her war against the Netherlands, and even in that effort of three years of preparation, the armada against England. As to the Spanish manufactures of that age, it appears that the higher classes wore the cloth of Ghent, Bruges, and Milan, and that the use of Spanish woollens was confined to the lower orders.

The population and principal divisions of Spain, in 1803, will appear by the following official table.

Provinces.	Total of Inhabitants.	Surface in square leagues 20 to a degree.	Inhabitants to a square league.
Province of Madrid	228,520	110	2078
Guadalaxára	121,115	163	743
Cuénca	294,290	945	311
Toledo	370,641	734	505
Mancha	205,548	631	326
A'vila	128,061	215	549
Segovia	164,007	290	566
Sória	198,107	341	581
Burgos	470,588	642	734
Extremadura	428,493	1,199	357
Kingdom of Cordoba	252,028	348	724
Jaén	206,807	268	772
Seville	746,221	752	992
Granada	692,924	805	861
Colonies of Sierra			
Morena	6,196	108	57
Kingdom of Múrcia	383,226	659	582
Arragon	657,376	1,232	534
Valencia	825,059	643	1283
Principality of Catalonia	858,818	1,003	856
Island of Majorca	140,699	112	1256
Minorca	30,990	20	1550
Ibiza and Formentera	15,290	15	1019
Kingdom of Navarre	221,728	205	1082
Province of Biscay	111,436	106	1051
Guipuzcoa	104,491	52	2009
A'lava	67,523	90	746
Principality of Asturias	364,238	308	1180
Province of León	239,812	493	486
Palencia	118,064	145	814
Salamanca	209,988	471	446
Valladolíd	187,390	271	692
Zamora	71,401	133	537
Toro	91,370	165	590
Kingdom of Galicia	1,142,630	1,330	859
	10,355,075	15,005	690

**SPAITLA**, a town of Africa, in Tunis, which, according to Dr. Shaw, is one of the most remarkable places in Barbary, from the extent and magnificence of its ruins. It has a most sumptuous triumphal arch, of the Corinthian order, consisting of one large arch, with a smaller one on each side. From this arch all along to the city, there is a pavement of large black stones, with a parapet wall raised breast high, on each side; at the end of this pavement is a beautiful portico, built in the same style with the arch, which leads into a spacious court, where there are ruins of three temples, with many columns, tablatures, &c., perfectly entire. Spaitla is seated on a rising ground, shaded with juniper trees; 110 miles south-west of Tunis. It was anciently called Sufetula.

**SPALATRO**, a sea-port of Austrian Dalmatia, on the gulf of Venice, the see of an archbishop, who is also metropolitan of Croatia. It stands on a peninsula in the form of a crescent, connected with the main land by a narrow isthmus. The harbour is spacious and deep, though not protected from all winds. The town is fortified both on the sea and land side, being commanded by several eminences. Population about 7500. Here are manufactures of woollen, silk, and leather. The fishery on the Adriatic is considerable, as well as the shipping business. The Turkish caravans, from Bosnia and Servia to Venice, usually deposit their goods in the Lazaretto in this place. Spalatro contains several Roman edifices. Dioclesian, on abdicating the imperial crown, retired to Illyria, built a palace in the neighbourhood of Salona; and two-thirds of the present city of Spalatro stand within the walls which surrounded this retreat; and which form a regular quadrangle, with a gate on each side. The whole of this part of the city is full of ancient arches and monuments. The cathedral is in fact an ancient temple in remarkable preservation: 110 miles north-west of Ragusa, and thirty south-east of Sebenico.

**SPALDING** (Charles), a late celebrated Scotch mechanician, a native (we think) of Edinburgh, who merits to be recorded in a dictionary of arts and sciences, for having made the most capital improvement that had then been, or probably has yet been made, upon the diving-bell. See DIVING-BELL. Of this useful improver of science we have met with no memoir; which seems rather ungrateful, as he lost his life in the public service, trying farther experiments and improvements upon his diving-bell in the harbour of Dublin; and, if report says true, he lost his life by the invidious and maliciously designed negligence of an Irishman, who was his competitor for fame in that art, and to whom he trusted to supply him with air, and to pull him up at the proper signals. This much of his history only is known to the writer of this article, from personal acquaintance, that, before he made his improvement on the diving bell, he was for several years in a respectable line of business, as a confectioner, in an elegant shop in the front of the Royal Exchange at Edinburgh; and where for several years after he had made his improvements, his wife kept up the business while he was absent at London, Dublin, or elsewhere, forwarding his experiments.

**SPALDING**, a market-town and parish in the district of Holland, Lincolnshire, situate near the mouth of the river Welland, twenty miles N. N. E. from Peterborough, and ninety-seven north from London. The Welland being navigable, the town carries on a considerable traffic in coals and corn, and supplies Yorkshire with large quantities of wool. The houses are neat, and the streets very clean. Great quantities of hemp and flax are grown close by. The church is an extensive ancient building, and in the town are five chapels for dissenters, a theatre, prison, and town-hall, where the quarter sessions and assemblies are held; a free-grammar school, charity-school, and some newly erected almshouses. A literary society, of which Sir Isaac Newton was a member, was established by Mr. Maurice Johnson, a native of the town; but since his death it has dwindled into insignificance, and is now merely a social club. For many centuries Spalding has been the principal seat of jurisdiction for the division of Holland. In the Saxon times the courts of law were held here by the earls; and, subsequent to the Norman conquest, the priors were invested with the judicial authority. Spalding is a place of great antiquity. Its priory, which in succeeding times became a monastery of great consequence, was founded and endowed in 1051 by Thorold de Bukenhale. The market-place is very spacious; and has a large cattle-market on Tuesday. Fairs April 27th for hemp, flax, cattle, and sheep; June 29th for merchandise, cattle, and horses; August 28th for horses; September 25th for all kinds of goods and cattle, and December 6th. The church is a curacy.

**SPALL. n. s.** Fr. *espaulie*. Shoulder. Out of use. ,

Their mighty strokes their habergions dismay'd,  
And naked made each other's manly spalles,

Fairfur.

**SPALLANZANI** (Lazarus), a late eminent naturalist, born at Scandiano, in Modena, on the 10th January, 1729. He was son of John Nicholas Spallanzani, an esteemed lawyer, and of Lucia Zugliani. He studied in his own country, and at the age of fifteen went to Reggio to improve himself. The Jesuits instructed him in the belles lettres; but his passion for knowledge led him to Bologna, where his relation, Laura Bassi, a woman justly celebrated for genius, eloquence, and skill in natural philosophy and mathematics, was one of the most illustrious professors of the Institute, and of Italy. He soon availed himself of that lady's wise counsels. He studied his own language with care, and perfected himself in the Latin, but attached himself to the Greek and the French. Homer, Demosthenes, St. Basil, were his favorite authors. He applied himself to jurisprudence at the instance of a father whom he tenderly loved, and was upon the point of receiving the degree of L. Civ. D., when Anthony Vallisneri, professor of natural history at Padua, persuaded him to renounce his vocation, and obtained the consent of his father. Spallanzani was soon famed all over Italy. The university of Reggio, in 1754, chose him to be professor in logic, metaphysics, and Greek. He taught there for ten years; but consecrated all the time he could spare to the obser-

vation of nature. His observations upon the animalculæ of infusions fixed the attention of Haller and Bonnet; the latter assisted him in his glorious career. In 1760 Spallanzani was called to the University of Modena, and had offers of those of Coimbra, of Parma, and of Cesena; but his patriotism made him prefer his own country. He remained at Modena till 1768, and he saw raised by his care a generation of men constituting at this time the glory of Italy; particularly Venturi, professor of natural philosophy at Modena; Belloni, bishop of Carpi; Lucchesini, ambassador of the late king of Prussia; and the poet Angelo Mazzo of Parma. At Modena Spallanzani published, in 1765, *Saggio di Osservazioni Microscopiche concernente il Sistema di Needham e Buffon*. He therein establishes the animality of what had been called, but not generally assented to, microscopic animalculæ, by the most ingenious, and at the same time, solid experiments. He sent this work to Bonnet, who from that moment formed the most intimate acquaintance with him, and it lasted during their lives. In 1765 he also published a dissertation truly original: *De Lapidibus ab Aqua resilientibus*. In that work he proves, by satisfactory experiments, contrary to the commonly received opinion, that the ducks and drakes (as they are called) are not produced by the elasticity of the water, but by the natural effect of the change of direction which the stone experiences in its movement, after the water has been struck by it, and that it has been carried over the bend or hollow of the cup formed by the concussion. In 1768 he prepared the philosophers for the surprising discoveries he was about to offer them, by publishing his *Prodromo di un Opera da Imprimersi sopra le Riproduzioni Animali*. He therein laid down the plan of his work; but this simple prospectus contained more real knowledge than all the former books on the subject, because it taught the method to be followed in this dark research, and contained many unexpected facts; such as the pre-existence of tadpoles at the fecundation, in many species of toads and frogs; the reproduction of the head cut off from snails, which he had communicated to Bonnet in 1766, and which was disputed for some time, in spite of the repeated confirmation of this phenomenon by Herissant and Lavoisier. He demonstrated it again afterwards in the *Memorie della Societa Italiana*; as also the renewal of the tail, the limbs, and even the jaws, taken from the aquatic salamander. These facts continue to astonish even at this day, though now familiar. The physiology of Haller, that Spallanzani studied, fixed his attention upon the circulation of the blood, in which he discovered several remarkable phenomena. He published, in 1768, a small tract, *Dell' Azione del Cuore ne' Vasi Sanguigni nuovi Osservazioni*; and he reprinted it in 1773, with three new dissertations, *De' Fenomeni della Circolazione osservata nel' Giro universali de' Vasi*; *De' Fenomeni della Circolazione Languente*; *De' Moti del Sangue, indipendente del Azione del Cuore e del Pulsare delle Arterie*. This work contains a series of observations and experiments of the most ingenious and delicate nature, upon a subject of

which the surface only is known. It merits the attention of physiologists. When the University of Padua was re-established upon a larger scale, the empress Maria Theresa directed the count de Firmian to invite him to fill the chair, as professor of natural history. He accepted, and his success was as great as his merits. Spallanzani united a vast extent of knowledge to a fine genius. His ardent love of truth made him discuss with care the theories which prevailed, to discover their weak sides. An eloquence, at once plain and lively, animated his discourses. At the university, Spallanzani took the *Contemplation de la Nature de Bonnet* for his text book; he translated it into Italian, and enriched it with notes; he prefixed a preface to it, wherein he pointed out the subjects of the vegetable and animal economy to the attention of his pupils, with the means of succeeding in their researches. He published the first volume of his translation in 1769, and the second in 1770. He published, in 1776, the two first volumes of his *Opuscoli di Fisica Animale e Vegetabile*, in farther explanation of the microscopic observations which had already appeared. Needham, not satisfied with the microscopic observations of Spallanzani, challenged the professor of Reggio to a reperusal of what he had written. Spallanzani has received much praise for the politeness with which he carried on this controversy, and for the severe logic with which he demonstrates to Needham the causes of his error, and proves that the animalculæ of infusions are produced by germs; that there are some of them which defy, like certain eggs and seeds, the most excessive cold, as well as the heat of boiling water.

Spallanzani was placed at the head of the university's cabinet of natural history, but its treasure no longer existed. He laid the foundations, however, for its renewal, and by his care it is become one of the best in Italy. He enriched it through his repeated travels by land and sea, in Europe, in Asia, across the Appennines, the Alps, the Krapacks, at the bottom of mines, on the top of volcanoes, at the mouth of craters. In 1779 Spallanzani ran over Switzerland and the Grisons; he then went to Geneva, where he spent a month with his friends. He returned to Pavia and published, in 1780, two new volumes of his *Dissertazione di Fisica Animale e Vegetabile*; wherein he illustrates two very obscure phenomena concerning the vegetable and animal economy. He made some experiments upon digestion; he repeated Reaumur's experiments upon the gallinaceous birds; and he observed that the trituration, which is in this case an aid to digestion, could not, however, be a very powerful means. He saw that the gizzard of those birds which pulverise the stones of fruit to pieces did not digest the powder so formed; that it was necessary it should undergo a new operation in the stomach, before it could become fit chyle for affording the elements of the blood and other humors. He proved that digestion is performed in the stomachs of numerous animals by the powerful action of a juice which dissolves the aliments; and he even had the courage to make several experiments on himself, and completed his proofs by artificial digestions, made in glasses upon the

table, by mixing the chewed aliments with the gastric juice of animals, which he extracted from their stomachs. This subject is one of the most difficult in physiology. Spallanzani, in this work, analysed the facts to discover their causes with certainty, and invented resources for surmounting obstacles. This work put John Hunter out of humor; and he published, in 1785, Some Observations upon Digestion, wherein he threw out some bitter sarcasms against Spallanzani, who took ample revenge by publishing this work in Italian, and addressing to Caldani, in 1788, Una Lettera Apologetica in Risposta alle Osservazioni del Signor Giovanni Hunter. He exposes with moderation, but with an irresistible logic, the oversights of the Scottish physiologist, and points out his errors in a manner which left him no room to reply. The second volume treats of the generation of animals and plants. He shows the seed in the flowers before the emission of their farina; and by a subtle anatomy, of which one can hardly form an idea, exhibits to the eye in the flower of the spartium junceum, the siliqua, its seeds, with their lobes, and the embryo plant: he pursues them in their expansion before and after fecundation, and leaves not a doubt but that the seeds and the pericarpia existed long before the blossoming of the buds, and consequently a long time before they could have been fecundated. He has repeated these observations upon various species of plants, with the same results; in short, he has raised the individuals of plants with female flowers which have borne fecundated seeds, although they were out of the reach even of suspicion of a communication with the farina of the male flowers. Such is the series of surprising phenomena Spallanzani adds to the history of nature. He availed himself of the academical vacation of 1781, to make a journey, the object of which was to add to the cabinet of Pavia. He set out in July for Marseilles, where he commenced a new history of the sea, which had presented him with a crowd of curious facts upon numerous genera of the inhabitants of the ocean. He went likewise to Finale, to Genoa, to Massa, and to Carrara, to observe the quarries of marble so famous with the statuaries; he returned to Spezzia, and thence brought to Pavia an immense number of fishes, crustaceous and testaceous, which he deposited in that cabinet. He also visited the coasts of Istria in 1782; the Appennine mountains in 1783, where he noticed the terrible hurricanes, and the surprising vapors which rendered that year so famous in meteorology. The cabinet of Pavia thus became the object of a stranger's admiration, and particularly Spallanzani, who had collected every part of it. The emperor Joseph III. had a conversation with Spallanzani and presented him with his medal in gold. The university of Padua offered to Spallanzani, in 1785, the chair of natural history, vacated by the death of Anthony Vallisneri; but the archduke doubled his pension, and sent him to accompany to Constantinople the chevalier Zuliani, ambassador from the republic of Venice. He left this city the 21st of August; and during his voyage made observations upon the marine productions of those climates, as well as upon the meteorologi-

cal events of every day; among which he had the advantage of beholding a species of water-spout. He touched at several islands in the Archipelago; went ashore at Troy, to visit the places sung by Homer; and made some geological observations and memoirs, which have appeared in the Memoire della Societa Italiana, upon the water-spouts at sea, the stroke of the torpedo, divers marine productions, and the island of Cytherea, where he discovered a mountain composed of various species of fossils. He arrived at Constantinople 11th of October and remained there eleven months. The physical phenomena of this country fixed his attention; he climbed up the neighbouring hills; visited the island of Chalki, where he made known to the Turks a mine of copper. He went to the Principi Island, a few miles from Constantinople, where he discovered an iron mine. He returned to Europe loaded with spoils from the east, having set out on his return for Italy the 16th of August 1786. When he arrived at Bucharest, he was detained there nine days by the celebrated Mauroceni, hodospas of Wallachia. This prince, the friend of Science, received him with distinction, presented him with many of the rarities of his country, furnished him with horses for travelling, and gave him an escort of thirty troopers throughout his dominions. Spallanzani passed by Hermanstadt in Transylvania and arrived at Vienna the 7th of December, after having viewed the numerous mines of Transylvania, Hungary, and Germany, which lay near his route. Spallanzani remained five days in Vienna, had two long audiences with the emperor Joseph II., was well received by the nobility, and visited by the men of letters. At length, arrived at Pavia, he was received by the students with every demonstration of joy. He had in the course of this year above 500 students. Spallanzani had acquired glory enough to merit the attacks of envy, which called in question his uprightness in the administration of the cabinet of Pavia, though the whole was the fruit of his own labors; but the integrity of Spallanzani appeared even more pure after the juridical examination of the tribunals. Determined to investigate the nature of volcanic matters he set out for Naples in summer, 1788, and ascended Mount Vesuvius: he looked attentively into its crater, examined and took notes, and embarked for the Lipari islands. In this investigation he exhibited the intrepidity of a warrior defying the most imminent dangers. He had the boldness to walk over that sulphureous crust, cleft with chinks, trembling, smoking, and burning, with every risk of falling into the volcano. He passed into Sicily, where he climbed up to Etna, and coasted its immense crater. He examined the stones and the mountains of Sicily, and discovered many new marine animals; he approached Scylla and Charybdis, and in a boat crossed the frothy billows of those deadly rocks, celebrated for so many shipwrecks; but in the very midst of their frightful waves he discovered the cause of their fury. See SCYLLA. Thus, at the age of sixty, he picked up those valuable anecdotes which fill his voyages in the two Sicilies; and compared the description which Homer, Pindar, Virgil, Diodorus Siculus, and

**Strabo**, have given of these famous places with that which he made himself. He now gave, in his *voyages*, a new volcanology, and illustrates his theory by artificial pumice stones. He concludes with some interesting enquiries into the nature of swallows, their mild dispositions and rapid flight; suggesting that an advantage might be drawn from them in the way of aerial post; their migrations determined by the temperature of the air, and the birth of insects it occasions; in short, he discusses the famous problem of their remaining benumbed during winter; and proves that artificial cold, much greater than that ever naturally felt in our climates, does not render these birds lethargic. He next speaks of a species of owl hitherto ill described; and, lastly, of eels and their generation, which is a problem still in some measure to be solved. Spallanzani early adopted the new system of chemistry. The solidity of its principles, and the accuracy of its conclusions, led him to anticipate with pleasure the triumph that it was about to obtain. In 1791 Spallanzani published a letter addressed to professor Fortis, upon the Pennet Hydroscope; but confesses that he is not decided upon the reality of the phenomenon. In 1795 he made a discovery, which he published in his *Lettore sopra il sospetto d'un nuovo senso nei Pipistrelli*; viz., that the bats, if blinded, act in every respect with the same precision as those which have their eyes; that they in the same manner avoid the most trifling obstacles, and that they know where to fix themselves on ceasing their flight. These extraordinary experiments surprised him; but the anatomical details of professor Jourine, upon the organ of hearing in this singular bird, made him conclude that the sense of hearing might in this case supply that of sight. Spallanzani concluded his literary career, by a letter addressed to the celebrated Giobert; *Sopra la piante chiuse ne' vasi dentro l'aqua e l'aria esposte a l'immediata lume solare e a l'ombra.* These numerous works did not contain all Spallanzani's labors. He had been occupied a considerable time upon the phenomena of respiration in a great number of animals; and he was busily employed in reducing to order his researches upon this subject. He has left a collection of experiments and observations upon animal productions, upon sponges, the nature of which he determines, and upon a thousand interesting phenomena which he knew how to draw out of obscurity. He had almost finished his Voyage to Constantinople, and had amassed considerable materials for a History of the Sea, when, on the 4th of February, 1799, he was seized with a retention of urine, and in the morning lost all powers of reason, which he never recovered but during short intervals. His intimate friends, Tourdes, a French physician, and the celebrated professor Scarpa, did every thing which could be expected from genius, experience, and friendship, to save him; but he died on the 17th, after having edified those around him by his piety, much regretted by his family, friends, and disciples. Spallanzani was undoubtedly a very great man. France, Germany, England, all were eager to avail themselves of his works by translations. He was admitted into the academ-

mies and learned societies of London, Stockholm, Gottingen, Holland, Lyons, Bologna, Turin, Padua, Mantua, and Geneva. He was a correspondent of the academy of sciences of Paris and of Montpellier; and received from the great Frederick himself the diploma of member of the academy of Berlin.

**SPALMADORI**, an island in the Grecian Archipelago, between Scio and the continent of Asia.

**SPAN**, *n. s. & v. a.* Sax. *rpan*, *rponne*; Ital. *spanna*; Goth. *span*. Perhaps originally the expansion of the hand. The space from the end of the thumb to the end of the little finger extended; nine inches: to measure in this way, or generally.

Will you with counters sum

The vast proportion of his infinite,  
And buckle in a waste most fathomless  
With spans and inches so diminutive  
As fears and reasons?

*Shakspeare. Troilus and Cressida.*

You have scarce time  
To steal from spiritual leisure a brief span,  
To keep your earthly audit. *Id. Henry VIII.*  
My surveyor is false; the o'er-great cardinal  
Hath shewed him gold; my life is spanned already.  
*Shakspear.*

This soul doth span the world, and hang content  
From either pole unto the centre;  
Where in each room of the well-furnished tent  
He lies warm, and without adventure. *Herbert*  
*Harry*, whose tuneful and well-measured song  
First taught our English musick how to span  
Words with just note and accent, not to scan  
With Midas' ears, counting short and long. *Milton.*

When I removed the one, although but at the distance of a span, the other would stand like Hercules' pillar. *Browne.*

The virgin's part, the mother, and the wife,  
So well she acted in this span of life. *Waller.*

A foot, the length of it, is a sixth part of the fathom; a span, one-eighth; a palm, or hand's breadth, one twenty-fourth; a thumb's breadth, or inch, one seventy-second; and a fore-finger's breadth, one ninety-sixth. *Holder on Time.*

Then conscience, unrestrained by fears, began  
To stretch her limits, and extend the span. *Dryden.*

Life's but a span, I'll every inch enjoy. *Farquhar.*

Oft on the well-known spot I fix my eyes,  
And span the distance that between us lies. *Tickel.*

The SPAN is estimated at three hand's breadths or nine inches.

**SPANDAU**, a fortified town in the Middle Mark of Brandenburg, Prussia, at the confluence of the Havel and Spree. The manufactures are inconsiderable, but the town contains a large workhouse, and a manufactory for government of arms. The citadel is a regular square outside of the town, with four ramparts forty feet high, and good casemates. It is chiefly used as a state prison. It was taken by the Swedes in the year 1631, but restored in 1634. In 1806 it was taken by the French. Inhabitants 5000, mostly Protestants. Eleven miles N. N. E. of Potsdam, and eight west of Berlin.

**SPAN' COUNTER**, *n. s. } From span, coun-*

**SPAN' FARTHING**. } ter, and farthing.  
A play at which money is thrown within a span or mark.

Tell the king, that for his father's sake, Henry V.,  
in whose time boys went to spancounter for French  
crowns, I am content he shall reign.

*Shakespeare. Henry VI.*

Boys shall not play

At spancounter or blowpoint, but shall pay

Toll to some courtier.

*Donne.*

His chief solace is to steal down, and play at span-  
farthing with the page.

*Swift.*

SPANDREL, the solid work on each haunch  
of an arch to keep it from spreading. Spandrels  
is used also synonymously for haunches.  
See HANCES.

SPANG, n.s.

{ Teut. *spange*; Goth.

SPANG'LE, n.s. & v. a. } *spang*, a buckle or  
locket. Any thing sparkling and shining: to  
adorn with spangles.

As hoary frost with spangles doth attire  
The mossy branches of an oak half dead.

*Faerie Queene.*

They never meet in grove or green,

By fountain clear, or spangled starlight sheen.

*Shakspeare.*

What stars do spangle heaven with such beauty,  
As those two eyes become that heavenly face. *Id.*

The colors that shew best by candlelight are white,  
*carnation*, and a kind of sea-water green; and ouches  
or spangs, as they are of no great cost, so they are of  
most glory.

*Bacon.*

Unpin that spangled breastplate which you wear,  
That the' eyes of busy fools may be stopt there.

*Donne.*

He cuts out a silk mantle from the skies,  
Where the most sprightly azure pleased the eyes;  
This he with starry vapours spangles all,  
Took in their prime, ere they grow, rise and fall.

*Cowley.*

Four faces each

Had, like a double Janus; all their shape  
Spangled with eyes, more numerous than those  
Of Argus.

*Milton's Paradise Lost.*

The twinkling spangles, the ornaments of the upper world, loose their beauty and magnificence; vulgar spectators see them but as a confused huddle of petty illuminants.

*Glanville.*

Thus in a starry night fond children cry  
For the rich spangles that adorn the sky.

*Waller.*

That now the dew with spangles decked the ground,

A sweeter spot of earth was never found.

*Dryden.*

The spacious firmament on high,  
With all the blue ethereal sky,  
And spangled heavens, a shining frame,  
Their great Original proclaim.

*Addison.*

SPANHEIM (Wigand), D. D., was a very learned man, of the sixteenth century, and became ecclesiastical counsellor to the elector Palatine. He was progenitor of a learned race. He died in 1620, after reading a letter from his son, which made him weep for joy, and die happy.

SPANHEIM (Frederick), D. D., the son of the doctor, was born at Amberg, in the Upper Palatinate, in 1600, and carefully educated by his father. He studied also in the college of Amberg; went thence, in 1614, to the university of Heidelberg, where he made a rapid progress in philosophy and languages. In 1619 he went to Geneva to study divinity. From 1621 to 1624 he resided in Dauphiné with the governor of Ambrun, as tutor. In 1625 he came over to Oxford, but in four months was obliged to fly to

avoid the plague. He refused a professorship of philosophy at Lausanne; but, in 1627, disputed for the same office at Geneva, and carried it. He then married a lady of Poitou, descended of the famous Budæus. He was admitted minister soon after, and, in 1631, on the death of Turretin, was appointed professor of divinity. In 1642 he left Geneva, and, taking his degree at Basil, went to Leyden, where his fame increased higher than ever. He published both on theology and history; but his great exertions shortened his days, and he died in May, 1649.

SPANHEIM (Ezekiel), the eldest son of Frederick, was born at Geneva in 1629. In 1642 he went to Leyden, where he distinguished himself greatly; and, his reputation spreading, Charles Lewis, elector palatine, sent for him to be tutor to his only son. This task our author discharged to the entire satisfaction of the elector; by whom he was also employed in divers negotiations at foreign courts. He afterwards entered into the service of the elector of Brandenburg, who in 1680 sent him envoy extraordinary to the court of France, and soon after made him a minister of state. After the peace of Ryswick, he was again sent on an embassy to France, where he continued from 1697 to 1702. The elector of Brandenburg, having during that interval assumed the title of king of Prussia, conferred on him the title and dignity of a baron. In 1702 he left France; and went ambassador to England, where he had been several times. Here he died in 1710, aged eighty-one years. It is surprising that in discharging the duties of a public minister with so much exactness, and amidst so many different journeys, he could find time to write the several books published by him; yet he acquitted himself in his negotiations like a person who had nothing else in his thoughts; and wrote like a man who had spent his whole time in his study. His chief works are, 1. *De Præstantia et usu Numismatum Antiquorum*; the best edition of which is in 2 vols. folio. 2. *Several Dissertations on Scarce and Curious Medals*. 3. A Preface and Notes to the edition of the emperor Julian's works, printed at Leipzig in 1696, folio.

SPANHEIM (Frederick), D. D., brother of Ezekiel, was born at Geneva in 1632; and in his tenth year was taken by his father to Leyden; where he studied philosophy under Hereboord; and was admitted doctor in that science in his nineteenth year. He studied Greek under Boxton, and Arabic under Golius. In 1652 he began to preach, and soon acquired such great fame in Zealand and Utrecht, that in his twenty-third year the elector Palatine invited him to be professor of divinity at Heidelberg. He accepted, and became D. D. at Leyden in 1655; and soon acquired great fame at Heidelberg, where he received many favors from the elector; but these did not prevent him from honestly and zealously opposing the elector, when he proposed to divorce his lady and marry another. He was frequently invited to other universities, but continued at Heidelberg till 1670, when he accepted of the professorship of divinity and church history at Leyden, where he was also made librarian, and was four times elected rector. His works

are chiefly theological, and were printed in 3 vols. folio, in 1703. He was three times married, and had several children; of whom only one son, Frederick, survived him. He died in 1701, aged sixty-nine.

**SPANIARD'S BAY**, on the east coast of Cape Breton Island, is round the point of the south entrance into Port Dauphin. Its mouth is narrow, but it is wider within, till it branches into two arms, both of which are navigable three leagues, and afford secure harbouring. Long.  $58^{\circ} 29' W.$ , lat.  $46^{\circ} 20' N.$  Also a bay on the north coast of the island of Cape Breton. Long.  $60^{\circ} 10' W.$ , lat.  $46^{\circ} 15' N.$

**SPANIEL**, n. s. Fr. *espagnoul*; Lat. *hispaniolus*. A dog used for sports in the field. See below.

Divers days I followed his steps till I found him, having newly met with an excellent spaniel belonging to his dead companion. *Sidney.*

I mean sweet words,  
Low crooked curtesies, and base spaniel fawning.  
*Shakspeare.*

I am your spaniel; and, Demetrius,  
The more you beat me I will fawn on you. *Id.*

There are arts to reclaim the wildest men, as there are to make spaniels fetch and carry; chide 'em often, and feed 'em seldom.

*Dryden's Spanish Fryar.*

The SPANIEL, *hispaniolus* (*canis avicularius* of Linnaeus), is a variety of the *canis familiaris*, much used in fowling. There are two varieties of this supposed Spanish breed; the first formerly used in hawking, to spring the game, the same with our starters; the others used only for the net, and formerly called index, or setter. This kingdom has been remarkable for producing dogs of this sort, particular care having been taken to preserve the breed. They are distinguished by the name of English spaniels; so that, notwithstanding the name, it is probable they are natives of Great Britain. The pointer, which is a dog of foreign extraction, was unknown to our ancestors.

The spaniel is a most useful dog, but subject to many distempers; among these the mange is a frequent and infectious one. As a remedy, some have recommended a decoction of a large quantity of brimstone, with some common salt and wood-ashes, in water and urine, of each equal quantities: this is to be used three or four times a day, washing the creature well with it before the fire, or in the warm sun. If this is not strong enough, the same ingredients, with the addition of a considerable quantity of wood-soot, are to be boiled in strong vinegar, and the liquor used in the same manner; but this must never be used in cold weather, as it would then endanger the creature's life. When this disease is not in a violent degree, it may be cured by the herb agrimony internally taken. The method is to pound the roots, leaves, and seeds, of this plant in a mortar, and mix them with a large quantity of wheaten-bran; they are to be then made into dough in the common way, and baked in an oven; the dog is to have no other bread but this for some time, but he is to eat of this as often and as much as he will: this, without any farther care, has cured many. Another troublesome disorder in this creature is what is

called the formica: this infests only the ears, and is caused by flies; and by the dog's scratching for them. The best medicine for these is this: take a quantity of pure and clean gum tragacanth, infuse it in white-wine vinegar; let as much vinegar be used as will serve to soften it, and, when it has lain a week in it, let it be taken out and ground on a marble, as the painters grind their colors, adding to it rock-alum and galls, reduced to powder, of each two ounces; all this is to be well mixed together, and the matter, if it grows too stiff in the grinding, is to be moistened with some of the vinegar in which the gum was soaked: when all is thoroughly mixed, and ground fine, it is to be put in a gallpot, and a small quantity of it applied to the creature's ear every night, till the complaint is removed. The swelling of the throat is another disease common to spaniels, but the cure of this is easy; there needs only to bathe it well with oil of camomile, and afterwards wash it with a mixture of vinegar and salt; this done night and morning, will, in a few days, wholly remove the complaint. Spaniels will sometimes, when they have much rest and good food, lose their sense of smelling, but this is recovered by a brisk purge and repeated airings; a very common dose on this occasion is a drachm of jalap, and two drachms of sal gem, mixed up into a bolus with oxymel of squills: this is to be rubbed over with some butter, and will be got down in that manner pretty easily.

**SPANISH COVE** is a creek of Ireland, on the south coast of the county of Cork, a little to the north-east of Browhead.

**SPANISH LAKE**, a lake of North America, in Louisiana, connected with Red River, with which it rises and falls. It is fifty miles in circumference. Eighteen miles above Natchitoches.

**SPANISH MAIN**, that part of the Atlantic Ocean which washes the north part of South America, from the Leeward Islands to the isthmus of Darien. A term also applied to the coast.

**SPANISH POINT**, a cape on the north-east coast of the island of St. Vincent. Long.  $61^{\circ} 12' W.$ , lat.  $13^{\circ} 24' N.$

**SPANISH TOWN**, or St. Jago de la Vega, a sea-port, the capital of Jamaica, and residence of a governor or commander-in-chief; the seat of the legislative assembly, the court of chancery, and supreme court of judicature. It is situated on the Cobre, about six miles from the sea, and contains about 550 houses, and 5000 inhabitants. Long.  $76^{\circ} 44' W.$ , lat.  $18^{\circ} 1 N.$  See **JAMAICA**.

**SPANK'ER**, n. s. From spang, see above. A small coin.

Your cure too costs you but a spanker. *Denham.*

**SPAN'NER**, n. s. From span. The lock of a fusee or carabine.

My prince's court is now full of nothing but buff coats, spanners, and musket-rests. *Howell.*

**SPAR**, n. s. { Sax. *ræp*; Rus. *spar*.

**SPAR'RY**, adj. { talc. Marcasite. See below: the adjective corresponding.

Some stones, as spar of lead, dissolved in proper menstruums, become salts. *Newton's Opticks.*

Spar is a mixed body, consisting of crystal, incorporated sometimes with lac lunæ, and sometimes

with other mineral, stony, earthy, or metallic matter.  
*Woodward.*

In which manner spar is usually found herein,  
and other minerals, or such as are of some observable figure; of which sort are the sparry striae, or icicles, called stalactite.  
*Id.*

**SPAR**, *v. a.* Sax. *spappan*. To shut; close; bar. Obsolete.

And if he chance come when I am abroad,  
*Sparre* the yate fast for fear of fraud;  
Ne for all his worst, nor for his best,  
Open the door at his request. *Spenser's Pastorals.*

Yet for she yode therat half aghast,  
And Kiddie the door *sparred* after her fast.  
*Spener.*

Six gates i' th' city, with massy staples,  
And corresponsive and fulfilling bolts,  
*Spar* up the sons of Troy. *Shakespeare.*

**SPAR**, in the old system of mineralogy, is a name given to those earths which break easily into rhomboidal, cubical, or laminated fragments with polished surfaces. As the term spar is thus applied to stones of different kinds, without any regard to the ingredients of which they are composed, some additional term must be used to express the constituent parts as well as the figure; for instance, calcareous spar, gypseous spar, &c. The spars found in Britain and Ireland are of four different species; opaque, refracting, diaphanous, and stalactitical. i. Diaphanous spar is rhomboidal, triangular, hexangular, pyramidal, or columnar; and is found in mines, quarries, and caverns, in many different places. ii. Opaque spar is rhomboidal, hexangular, and triangular, of various colors, and is found in mines in Wales, Derbyshire, &c., and at Ovens near Cork. iii. Refracting spar is rhomboidal, shows objects seen through it double, and sometimes eight, twelve, or sixteen images at once. It is frequent in the lead mines of Derbyshire, Yorkshire, &c. iv. Stalactitical spar, icicle, or drop-stone, is formed by the running or dropping of water, containing a large proportion of calcareous earth. It is opaque, generally laminated, but from accidental circumstances assumes various forms. It occurs at Knaresborough in Yorkshire, and at Ovens near Cork.

**SPAR**, *ADAMANTINE*, is a new species of spar, found in the East Indies. Dr. Thomson makes it the same with the corundum of Gmelin. There are two varieties of this spar; one of them comes from China, and crystallises in hexagonal prisms without pyramids, the length of the sides varying from six to twelve lines; their breadth being about nine, of a gray color with different shades. The other kind found in Hindostan is of a whiter color, and of a more laminated texture than the former; the grains of iron contained in it are likewise of a smaller size than those of the former; they are not diffused through its substance, but only adhere to its surface. This spar is exceedingly difficult to analize. To do so, M. Klapproth was obliged to melt it no less than twelve times with fifteen parts of soda or mineral alkali, in a silver crucible; the heat being each time continued for five hours as strong as the crucible could bear. After each fusion the mass was softened by boiling distilled water, filtering and precipitating by acids the small quan-

tity of earth which the alkali had dissolved; and lastly, that portion which had not been decomposed was digested at different times with concentrated and boiling acids. See the result under *MINERALOGY*, as above. From a letter of M. Morveau to Mr. Crell it appears that this stone is also found in France. A small bit of this was tried by him in presence of Mr. Wedgwood, and he found that its specific gravity is superior to that of China, being no less than 4.1803, and the true adamantine spar of China gave 3.8222.

**SPAR**, *FELT*, or *FELT-SPAR*, or *FELSPAR*, as Dr. Thomson spells it, is called by former mineralogists rhombic quartz, and is the petuntse of the Chinese. See *QUARTZ* and *MINERALOGY*.

**SPAR**, *PONDEROUS*, or *terra ponderosa*, is now called barytes. See *CHEMISTRY*, Index, and *MINERALOGY*.

**SPAR'ADRAP**, *n. s.* Span. *espar*, a drug. In pharmacy, a cerecloth.

With application of the common *sparadrap* for issues, this ulcer was by a fontanel kept open.  
*Wieseman's Surgery.*

**SPARE**, *v. a.*, *v. n.*, *adj.* { Saxon *spapan* ;  
**SPAKER**, *n. s.* { & *n. s.* } Goth. and Swedish  
**SPARING**, *adj.* { *spara* ; Belg. *sparen* ;  
**SPARINGLY**, *adv.* Fr. *epurger*.  
To use frugally; not to waste or lavish; to save; omit; forbear: hence to grant; allow; use with tenderness or kindness: as a verb neuter, to live frugally; to forbear: as an adjective, scant; mean; lean: superfluous: the derivatives corresponding.

Who will set the discipline of wisdom over mine heart, that they *spare* me not for my ignorances?  
*Eccl. xxiii. 2.*

*Spare* us, good Lord. *Common Prayer.*

All the time he could *spare* from the necessary cares of his weighty charge, he bestowed on prayer, and serving of God: he oftentimes spent the night alone in church, praying; his head-piece, gorget, and gauntlet lying by him. *Knolles.*

Those wants, which they rather feared than felt, would well enough be overcome by *sparing* and patience. *Id.*

His soldiers *spared* not to say that they should be unkindly dealt with, if they were defrauded of the spoil. *Id.*

If that no *spare* clothes he had to give,  
His own coat he would cut, and it distribute glad.  
*Spenser.*

I could have better *spared* a better man.  
*Shakespeare. Henry IV.*

O give me your *spare* men, and *spare* me the great ones. *Shakespeare.*

H' has wherewithal: in him  
*Sparing* would show a worse sin than ill doctrine.  
*Id.*

Give us leave  
Freely to render what we have in charge;  
Or shall we sparingly shew you far off  
The dauphin's meaning? *Id. Henry V.*

Our victuals failed us, though we had made good  
*spare* of them. *Bacon.*

Their king, out of a princely feeling, was sparing  
and compassionate towards his subjects. *Id.*

Men ought to beware that they use not exercise  
and a *spare* diet both. *Id. Natural History.*

Of this there is with you *sparing* memory, or none;  
but we have large knowledge thereof. *Bacon.*

If much exercise, then use a plentiful diet; and if sparing diet, then little exercise. *Id.*

The borders whereon you plant fruit-trees should be large, and set with fine flowers; but thin and sparingly, lest they deceive the trees. *Id. Essays.*

High titles of honour were in the king's minority sparingly granted, because dignity then waited on desert. *Hugward.*

Since uncheckt they may,  
They therefore will make still his goods their prey,  
Without all spare or end. *Chapman.*

For his mind I do not care,  
That's a toy that I could spare;  
Let his title be but great,  
His cloths rich, and band sit neat. *Ben Jonson.*

By nature far from profusion, and yet a greater sparer than a saver; for, though he had such means to accumulate, yet his forts, garrisons, and his feastings, wherein he was only sumptuous, could not but soal his exchequer. *Wotton.*

He was spare but discreet of speech, better conceiving than delivering; equally stout and kind. *Carew's Survey of Cornwall.*

Doth not each look a flash of lightning feel,  
Which spares the body's sheath, but melts the steel? *Cleaveland.*

Commend but sparingly whom thou dost love;  
But less condemn whom thou dost not approve. *Denham.*

Thou thy father's thunder didst not spare. *Milton.*

Sense of pleasure we may well  
Spare out of life perhaps; and not repine;  
But pain is perfect misery. *Id.*

His visage drawn he felt so sharp and spare,  
His arms clung to his ribs. *Id. Paradise Lost.*

Join with thee calm peace and quiet;  
Spare fast, that oft with gods doth diet. *Milton.*

In these relations, although he be more sparing,  
his predecessors were very numerous. *Browne's Vulgar Errors.*

Set me in the remotest place  
That Neptune's frozen arms embrace;  
Where angry Jove did never spare  
One breath of kind and temperate air. *Roscommon.*

Our labours late and early every morning,  
Midst winter frosts; then clad and fed with sparing,  
Rise to our toils. *Otway.*

Less pleasure take brave minds in battles won  
Than in restoring such as are undone:  
Tygers have courage, and the rugged bear;  
But man alone can whom he conquers spare. *Waller.*

Only the foolish virgins entertained this foolish conceit, that there might be an overplus of grace sufficient to supply their want; but the wise knew not of any that they had to spare, but supposed all that they had little enough. *Tillotson.*

The fair blessing we vouchsafe to send;  
Nor can we spare you long, tho' often we may lend. *Dryden.*

O spare this great, this good, this aged king,  
And spare your soul the crime! *Id. Spanish Fryar.*

Though sparing of his grace, to mischief bent,  
He seldom does a good with good intent. *Dryden.*

God has not been so sparing to men to make them barely two-legged creatures, and left it to Aristotle to make them rational. *Locke.*

The masters of the world were bred up with spare diet; and the young gentlemen of Rome felt no want of strength, because they ate but once a day. *Id.*

In my spare hours you've had your part;  
Ev'n now my servile hand your sovereign will obeys. *Norris.*

Learning seems more adapted to the female world than to the male, because they have more spare time upon their hands, and lead a more sedentary life. *Addison's Spectator.*

When they discover the passionate desire of fame in the ambitious man, they become sparing and saving in their commendations; they envy him the satisfaction of an applause. *Addison.*

Christians are obliged to taste even the innocent pleasures of life but sparingly. *Atterbury.*

Now a reservoir, to keep and spare; The next a fountain spouting through his heir. *Pope.*

Good air, solitary groves, and sparing diet, sufficient to make you fancy yourself one of the fathers of the desert. *Id.*

Let a pamphlet come in a proper juncture, and every one who can spare a shilling shall be a subscriber. *Swift.*

SPARGANIUM, bur reed, in botany, a genus of plants belonging to the class of monœcia, and to the order of triandria; and in the natural system ranged under the third order, calamariae. The amentum of the male flower is roundish, the calyx is triphyllous, and there is no corolla. The amentum of the female flower resembles that of the male. The stigma is bifid; the fruit is a dry berry containing one seed. There are two species, the erectum and natans, both of them natives of Great Britain and Ireland.

1. S. erectum, great bur reed, has a stem two or three feet high, erect, firm, and branched: the lower leaves are triangular, the upper ones plain. The male heads are much smaller than the female. This species flowers in July, and is frequent on the banks of rivers and lakes, and stagnant waters.

2. S. natans, floating or little bur reed, has a stalk about two feet long. The leaves float, are about a foot long, one-fourth of an inch wide at the base, and one-eighth in the middle, and end in a point. The male sphærules are generally three, and all sessile; the female are commonly three, the two lower being supported on peduncles, the uppermost sessile. It flowers in July, and grows in pools and lakes, but is rare.

SPARK, n. s. & v. n.	Saxon <i>rpeanca</i> ;
SPARK'FUL, adj.	Teut. <i>spark</i> ; Belgic
SPARK'ISH,	<i>spark</i> . A particle of
SPAR'KLE, n. s. & v. n.	fire, or kindled matter;
SPARK'LINGLY, adv.	any thing vivid,
SPARK'LINGNESS, n. s.	shining, or showy: to emit sparks. Obsolete. The adjectives both mean brisk; airy; gay; and are both uncommon: a spark is a small spark: to sparkle, to emit sparks; shine; glitter: the adverb and noun substantive corresponding.

Fair is my love,  
When the rose in her cheek appears,  
Or in her eyes the fire of love doth spark. *Spenser.*

If any marvel how a thing, in itself so weak, could import any great danger, they must consider not so much how small the spark is that flieth up, as how apt things about it are to take fire. *Hooker.*

To detract from the dignity thereof, were to injure even God himself, who, being that light which none can approach unto, hath sent out these lights whereof we are capable, even as so many sparkles resembling the bright fountain from which they rise. *Id.*

I am about to weep ; but thinking that  
We are a queen, my drops of tears I'll turn  
To sparks of fire. *Shakspeare.*

If any spark of life be yet remaining,  
Down, down to hell, and say I sent thee thither.

*Id.*

Hitherto will our *sparkful* youth laugh at their  
great grandfathers' English, who had more care to  
do well than to speak minion-like.

*Cudmen's Remains.*

When reason's lamp, which, like the sun in sky,  
Throughout man's little world her beams did spread,  
Is now become a *sparkle* which doth lie

Under the ashes, half extinct and dead. *Davies.*

I am not forgetful of the *sparks* which some men's  
distempers formerly studied to kindle in parliaments.

*King Charles.*

The bold design

Pleased highly those infernal states, and joy  
*Sparkled* in all their eyes. *Milton.*

Diamonds sometimes would look more *sparklingly*  
than they were wont, and sometimes far more dull  
than ordinary. *Boyle.*

I have observed a manifestly greater clearness and  
*sparklingness* at some times than at others, though I  
could not refer it to the superficial clearness or foul-  
ness of the stone. *Boyle.*

In this deep quiet, from what source unknown  
Those seeds of fire that fatal birth disclose ;

And first few scattering *sparks* about were blown,  
Big with the flames that to our ruin rose. *Dryden.*  
A *spark* like thee, of the mankilling trade,  
Fell sick. *Id.*

He, with repeated strokes  
Of clashing flints, their hidden fires provokes ;  
Short flame succeeds ; a bed of withered leaves  
The dying *sparkles* in their fall receives :  
Caught into life, in fiery fumes they rise,  
And, fed with stronger food, invade the skies. *Id.*

How many huffing *sparks* have we seen, that in the same day have been both the idols and the scorn of the same slaves. *L'Estrange.*

A daw, to be *sparkish*, tricked himself up with all the gay feathers he could muster. *Id.*

We have, here and there, a little clear light, some  
*sparks* of bright knowledge. *Locke.*

A hair seen in a microscope loses its former color, and is in a great measure pellucid, with a mixture of some bright *sparkling* colors, such as appear from the refraction of diamonds. *Id.*

Is any thing more *sparkish* and better humoured than Venus's accosting her son in the deserts of Lybia ? *Walsh.*

The finest *sparks*, and cleanest beaux,  
Drip from the shoulders to the toes. *Prior.*

As for the disputes of sharpers, we don't read of any provisions made for the honours of such *sparks*. *Collier.*

I, who have been the poet's *spark* to-day,  
Will now become the champion of his play. *Granville.*

Oh, may some *spark* of your celestial fire  
The last, the meanest, of your sons inspire ! *Pope.*

Ah ! then thy once-loved Eloisa see !  
It will be then no crime to gaze on me :  
See from my cheek the transient roses die,  
See the last *sparkle* languish in my eye. *Id.*

Politulus is a fine young gentleman, who *sparkles* in all the shining things of dress and equipage. *Watts.*

Well spoken, advocate of sin and shame,  
Known by thy bleating, ignorance thy name.  
Is *sparkling* wit the world's exclusive right ?  
The fixed fee-simple of the vain and light ?

*Cowper.*

When flints are struck against other flints they have the property of giving *sparks* of light; but it seems to be an internal light, perhaps of electric origin, very different from the ignited *sparks* which are struck from flint and steel. *Darwin.*

There are ten thousand tones and signs

We hear and see, but none defines—

Involuntary *sparks* of thought,

Which strike from out the heart o'erwrought,

And form a strange intelligence,

Alike mysterious and intense,

Which link the burning chain that binds,

Without their will, young hearts and minds.

*Byron.*

### SPARLING, in ichthyology. See SALMO.

SPARMANNIA, in botany, a genus of plants of the monogynia order, and polyandria class of plants : cor. four petals, and is bent back ; the nectaria are numerous, and swell a little : cal. quadriphyllous : caps. angulated, quinquelocular, and echinated. There is only one species, viz. S. Africana.

SPARRMAN (Andrew), a late Swedish naturalist and traveller, born in Upland about 1747, studied medicine at Upsal, and attracted the notice of Linnaeus. In 1765 he made a voyage to China with his cousin captain Ekeberg : on his return he described, in an academical thesis, the previously unknown animals and vegetables which he had discovered ; and soon after accepted the office of tutor to the children of a Dutch inhabitant of the Cape of Good Hope, where he arrived in April 1772. Dr. Forster and his son, visiting the Cape with captain Cook, persuaded Sparrman to accompany them, as an assistant in their researches ; and, accepting the proposal, he made the voyage round the world, returning in 1775 to Africa, where he engaged in the practice of medicine. As soon as the state of his funds permitted, he undertook a journey into the interior ; and, after penetrating to the distance of 350 leagues, returned to that settlement in April 1776, bringing a copious collection of African plants and animals. The same year he revisited his native country, and during his absence had been honored with the degree of M. D. He was chosen a member of the Academy of Sciences at Stockholm ; and, on the death of baron de Geer, was nominated conservator of the museum left to the Academy by that naturalist. He was subsequently made president of the institution. In 1787 he engaged in an abortive attempt to explore the interior of Africa, and returned home in 1788. His death took place at Stockholm, July 20th, 1820. He was the author of an Account of his Voyage to the Cape of Good Hope, and Travels in Africa, written in Swedish, and published in German at Berlin ; and in an English dress in London, 1785, 2 vols. 4to.

SPARROW, n. s. Sax. *þreapna*. A small bird.

Dismayed not this

Macbeth and Banquo ?—Yes,

As *sparrows* eagles, or the hare the lion. *Shakespeare.*

There is great probability that a thousand *sparrows* will fly away at the sight of a hawk among them. *Watts.*

The *sparrows* peep, and quit the sheltering eaves,  
To seize the fair occasion ; well they eye

The scattered grain, and thievishly resolved  
To escape the' impending famine, often scared  
As oft return, a pert voracious kind. *Couper.*

**SPARROW.** See *FRINGILLA.*

**SPAR'ROWGRASS,** *n. s.* Corrupted from asparagus.

Your infant pease to *sparrowgrass* prefer,  
Which to the supper you may best defer. *King.*

**SPARROW GRASS.** See *ASPARAGUS.*

**SPARROW HAWK.** See *FALCO.*

**SPARRY ANHYDRITE,** or *CUBESPAR*, is a sub-species of prismatic gypsum. Color white, passing into blue or red. Massive, in distinct concretions, and crystallised. The primitive figure is an oblique prism, in which the angles are  $108^{\circ} 8'$  and  $79^{\circ} 56'$ . The secondary forms are, a rectangular four-sided prism, a broad six-sided prism, an eight-sided prism, and a broad rectangular four-sided prism, acuminate. Splendent, pearly. Cleavage threefold. Fragments cubical. Fracture conchoidal. Transparent. Refracts double. Scratches calcareous spar, but not fluor. Brittle. Specific gravity 2.7 to 3.0. It does not exfoliate before the blowpipe, and melt like gypsum, but becomes glazed over with a white friable enamel. Its constituents are, lime 41.75, sulphuric acid 55, muriate of soda 1.—Klaproth. It is sometimes met with in the gypsum of Nottinghamshire. It occurs in the salt-mines of Halle, &c.

**SPARRY IRON,** or carbonate of iron. The color a pale yellowish-gray. Massive, disseminated, and crystallised. The primitive form is a rhomboid of  $107^{\circ}$ . The following are some of the secondary forms. The primitive, perfect, or truncated; a still flatter rhomboid; the spherical lenticular form; the saddle-shaped lens, and the equiangular six-sided prism. Glistening, or splendid, or pearly. Cleavage threefold. Fracture foliated, or splintery. Translucent on the edges. Streak white or yellowish-brown. Harder than calcareous spar. Easily frangible. Specific gravity 3.6 to 3.9. It blackens and becomes magnetic before the blowpipe, but does not melt; it effervesces with muriatic acid. Its constituents are, oxide of iron 57.5, carbonic acid 36, oxide of manganese 3.5, lime 1.25.—Klaproth. It occurs in veins in granite, gneiss, &c., associated with ores of lead, cobalt, silver, copper, &c. But the most extensive formations of this mineral are in limestone. It is found in small quantities in England, Scotland, and Ireland; in Saxony, Bohemia, &c.; and in large quantities in Fichtelgebirge, and at Schmalkalden in Hessa. It affords an iron well suited for conversion into steel.

**SPARTA,** or Lacedæmon, the capital of Laconia in Greece, an ancient and renowned state, the inhabitants of which have been in all ages celebrated for the singularity of their laws and character. See *LACEDÆMON.*

The ancient history of Laconia, and of Sparta its capital, like that of most other ancient nations, is mingled with fable; but, when stripped of the poetical trappings of mythology, it will be found to contain some facts at least more consistent and credible than the nonsense that is palmed upon us by some modern credulous philosophers for the ancient history of China. All

historians agree that Lelex was the first king of Laconia, and that from him the country was called Lelegia, and the people Leleges. Lelex was succeeded by his son Eurotas, who gave name to the river which runs near the city. Eurotas had a daughter named Sparta, who was married to Lacedæmon, a son of Jupiter, who succeeded him (see *LACEDÆMON*), and who, along with his wife, gave both their names, not only to the capital, but to the whole people. Hence we seldom hear of the Laconians in the ancient history of Greece, but always either of the Spartans or Lacedæmonians. Lacedæmon and Sparta had a son named Amyclas, who succeeded to the throne; and a daughter named Eurydice, who was married to Acrisius, king of Argos, by whom she became the mother of Danae, and grandmother of Perseus. Amyclas I. built the city of Amyclæ, married Diomedea, and was succeeded by his son Argalus, who left the kingdom to his son Amyclas II.; who was succeeded by his son Cynortas, and the latter by his son Æbalus. This Æbalus was a famous monarch; gave the new name of Æbalia to the whole country, and married Gorgophone, the daughter of his cousin Perseus, by whom he had Hippocoon, Tyndarus, and Icarus, the father of Penelope. Hippocoon was one of the heroes who went to the hunting of the Calydonian boar: but, upon the death of Æbalus and succession of Tyndarus, Hippocoon rebelled against his brother, and expelled him from the kingdom. Upon this Hercules took the part of the exiled monarch, killed Hippocoon, and restored Tyndarus. This monarch's domestic history was singular, and afforded a wide field for the fictions of the poets. He married Leda, the daughter of Thespis, who brought him four children, Castor, Pollux, Helena, and Clytemnestra, two of whom were confessedly not by her husband, and all of them were born in a manner very miraculous. See the poetical fables under these articles. But whether Jupiter or his priest was the goose upon this occasion, the produce of Leda's eggs all became famous, and some of them infamous. Helena, whose uncommon beauty had attracted most of the princes of Greece to be her suitors, by the advice of Ulysses gave the preference to Menelaus; and all the Grecian princesses took a solemn oath to defend her. With her Menelaus acquired the kingdom of Sparta; and Ulysses for his services obtained Penelope. But afterwards, while Menelaus was absent at Crete, Helen eloped with Alexander or Paris, the Trojan prince; and this gave rise to the famous war which ended in the destruction of Troy; the subject by which Homer immortalized his name. Some historians say that Helen reconciled herself to Menelaus that night Troy was taken, by introducing him into the chamber of Deiphobus, whom she had married after Paris's death, and that she returned with him to Sparta, and survived him. Pausanias says that Menelaus's palace at Sparta was entire in his days.

After the death of Menelaus, his nephew Orestes succeeded to the kingdom in right of his cousin and wife Hermione. See *HERMIONE*, and *ORESTES*. His posterity, however, were soon after expelled by the Heraclidæ both from Sparta and Argos. See *HERACLIDA*. The era of the

return of the Heraclidae is generally reckoned the period when fable ends, and the true history of Greece begins; and is computed to commence about eighty years after the Trojan war, and 1190 A. A. C., or, as Lempriere has it, 1104. The leaders of the Heraclidae, in the conquest of Peloponnesus, were Aristodemus, Temenus, and Chresphontes, the sons of Aristomachus, and grandsons of Cleodæus, the son of Hyllus, the son of Hercules. See HYLLUS. Sparta fell to the share of Aristodemus; who, after reigning only two years, was killed by the sons of Pylades, the friend of Orestes, in revenge for the expulsion of the Orestidae. He left two sons, Eurysthenes and Procles, who were born twins, and so nearly at the same moment that their mother either did not know which was first born, or pretended not to know it, that both might reign. Accordingly the oracle of Delphi, being consulted on the case, decided that both should reign; and thus gave rise to that singular political phenomenon, a binarchy, which so peculiarly distinguished the constitution of Sparta from that of all other kingdoms; for though two monarchs have often reigned at once in other countries, sometimes as colleagues, at other times by an agreed division of territory, there is not an instance in the history of mankind of a regular binarchy kept up in two branches of the same family, for several centuries, in any other country but Laconia. Procles and Eurysthenes began to reign conjunctly A. A. C. 1102; Procles reigned forty-two years, and Eurysthenes forty-three. Their respective successors, called Proclidæ and Eurysthenidæ, and likewise Euryponidæ and Agidae, succeeded in the following order and years B. C., and most of them succeeded his father or brother:—

Proclidæ.	A. A. C.	Eurysthenidæ.	A. A. C.
Sous . . . .	1060	Agis I. . . .	1059
Eurypon . . . .	1028	Echestratus . . .	1058
Prytanæ . . . .	1021	Labotas . . . .	1023
Eunomus . . . .	986	Doryssus . . . .	986
Polydectes . . . .	907	Agesilaus I. . . .	957
Lycurgus I. . . .	898	Archelaus . . . .	913
Charilaus . . . .	873	Teleclus . . . .	853
Nicander . . . .	809	Alcamedes . . . .	813
Theopompus . . . .	770	Polydorus . . . .	776
Zeuxidamus . . . .	723	Eurycrates I. . . .	724
Anaxidamus . . . .	690	Anaxander . . . .	687
Archidamus I. . . .	651	Eurycrates II. . . .	644
Agasicles . . . .	605	Leonidas I. . . .	607
Ariston . . . .	564	Anaxandrides . . . .	563
Demaratus . . . .	526	Cleomenes I. . . .	530
Leotychides . . . .	491	Leonidas II. . . .	491
Archidamus II. . . .	466	Cleombrotus I. . . .	485
Agis I. . . .	427	Plistarchus . . . .	480
Agesilaus II. . . .	397	Plistonax . . . .	466
Archidamus III. . . .	361	Pausanias . . . .	408
Agis II. . . .	338	Agesipolis I. . . .	397
Eudamidas I. . . .	330	Cleombrotus II. . . .	380
Archidamus IV. . . .	295	Agesipolis II. . . .	371
Eudamidas II. . . .	268	Cleomenes II. . . .	370
Agis III. . . .	244	Aretus I. . . .	309
Archidamus V. . . .	230	Acrotatus . . . .	265
Euclidas . . . .	225	Aretus II. . . .	264
Lycurgus II. . . .	219	Leonidas III. 257 & 241	
		Cleombrotus III. . . .	243
		Cleomenes III. . . .	235
		Agesipolis III. . . .	219

Of the majority of the kings in the above list little is recorded; but the most remarkable of them for wisdom, virtue, and courage, have already been taken notice of, and memoirs of them inserted, in their order. Some of the other Spartan heroes will be mentioned afterwards. We therefore hasten to the most important part of the Spartan history. After the death of Lycurgus I., the great legislator of Sparta, in A. A. C. 873, the first important transaction was the Messenian war, which commenced in 752 B. C. and ended in the total reduction of the Messenian territory, notwithstanding the astonishing exertions of Aristomenes. During this period a great change took place in the government of Sparta. This was the creation of the ephori, which is ascribed to king Theopompus; who, perceiving that there was a necessity for leaving magistrates to execute the laws when the kings were obliged to be in the field, appointed the magistrates above mentioned, who afterwards made so great a figure in the state. See EPHORI. One great privilege of the ephori was that they did not rise up at the presence of the kings, as all other magistrates did: another was that, if the kings offended against the laws, the ephori took cognizance of the offence, and inflicted punishment. From the first election of the ephori the year was denominated, as at Athens from the first election of the archons.

The conquest of Messenia gave Sparta the superiority over the rest of the states, excepting only that of Athens, which for a long time continued to be a very troublesome rival; but the contests between these two rival states have been so fully related, under the article ATTICA, that nothing more is requisite to be added. In the time of the Persian war Leonidas I., the Spartan king, distinguished himself in a most extraordinary manner. It being resolved in a general council to defend the straits of Thermopylae against the Persians, 7000 foot were put under the command of Leonidas, of whom, however, only 300 were Spartans. Leonidas did not think it practicable to defend the pass against such multitudes as the Persian king commanded; and therefore privately told his friends that his design was to devote himself to death for his country. Xerxes, advancing near the straits, was strangely surprised to find that the Greeks were resolved to dispute his passage; for he had always flattered himself that, on his approach, they would betake themselves to flight, and not attempt to oppose his innumerable forces. However Xerxes, still entertaining some hopes of their flight, waited four days without undertaking any thing, on purpose to give them time to retreat. During this interval he endeavoured to corrupt Leonidas, promising to make him master of all Greece if he would come over to his interest. His offers being rejected, with contempt and indignation, the king ordered him by a herald to deliver up his arms. Leonidas, in a style truly laconical, answered, 'Come thyself and take them.' Xerxes in a rage commanded the Medes and Cissians to march against them, take them alive, and bring them to him in fetters. The Medes, not able to stand the shock of the Greeks, soon took themselves to flight; and in their room

Hydarnes was ordered to advance with that body which was called immortal, and consisted of 10,000 chosen men ; but these succeeded no better than the former, being obliged to retire with great slaughter. The next day the Persians, reflecting on the small number of their enemies, and supposing so many of them to be wounded that they could not possibly maintain a second fight, resolved to make another attempt : but, instead of making the Greeks give way, they were themselves put to a shameful flight. The valor of the Greeks on this occasion was exerted in a manner so extraordinary that Xerxes dreaded the entire destruction of his army. Xerxes, finding the Greeks determined to conquer or die, was extremely perplexed what measures he should adopt ; when one Ephialtes discovered a secret passage to the top of the hill which overlooked and commanded the Spartan forces. The king immediately ordered Hydarnes thither with his select body of 10,000 Persians ; who, marching all night, arrived at break of day, and possessed themselves of that advantageous post. The Phocæans, who defended this pass, being over-powered by the enemy's numbers, retired with precipitation to the very top of the mountain, prepared to die gallantly. But Hydarnes, neglecting to pursue them, marched down the mountain with all possible expedition to attack those who defended the straits in the rear. Leonidas, being now apprised that it was impossible to bear up against the enemy, obliged the rest of his allies to retire : but he staid himself with the Thespians, Thebans, and 300 Lacedæmonians, all resolved to die with their leader ; who, being told by the oracle that either Sparta should be destroyed or the king lose his life, determined, without the least hesitation, to sacrifice himself for his country. The Thebans indeed remained against their inclination, being detained by Leonidas as hostages ; for they were suspected to favor the Persians. The Thespians, with their leader Demophilus, could not by any means be prevailed upon to abandon Leonidas and the Spartans. The augur Megistias, who had foretold the event of this enterprise, being pressed by Leonidas to retire, sent home his only son ; but remained himself and died by Leonidas. Those who staid did not feed themselves with any hopes of conquering or escaping, but looked upon Thermopylæ as their graves ; and when Leonidas, exhorted them to take some nourishment, said that they should all sup together with Pluto, with one accord they set up a shout of joy, as if they had been invited to a banquet. Xerxes began to move at sun rise with the whole body of his army, as he had been advised by Ephialtes. Upon their approach Leonidas advanced to the broadest part of the passage, and fell upon the enemy with such undaunted courage and resolution that the Persian officers were obliged to stand behind the divisions they commanded to prevent the flight of their men. Great numbers of the enemy, falling into the sea, were drowned ; others were trampled underfoot by their own men, and many killed by the Greeks ; knowing they could not avoid death upon the arrival of those who were advancing to fall upon their rear, exerted their utmost efforts. In this

action fell the brave Leonidas ; which Abrocomes and Hyperanthes, two brothers of Xerxes, observing, advanced with great resolution to seize his body, and carry it in triumph to Xerxes. But the Lacedæmonians, more eager to defend it than their own lives, repulsed the enemy four times, who, killed both the brothers of Xerxes, with many other commanders of distinction, and rescued the body of their beloved general out of the enemy's hands. But in the mean time the army that was led by the treacherous Ephialtes advancing to attack their rear, they retired to the narrowest place of the passage, and drawing altogether except the Thebans, posted themselves on a rising ground. In this place they made head against the Persians, who poured in upon them on all sides, till at length, not vanquished, but oppressed and overwhelmed by numbers, they all fell except one, who escaped to Sparta, where he was treated as a coward and traitor to his country ; but afterwards made a glorious reparation in the battle of Platea, where he distinguished himself in an extraordinary manner. Some time after a magnificent monument was erected at Thermopylæ in honor of those brave defenders of Greece, with two inscriptions ; the one general, and relating to all those who died on this occasion, importing, that the Greeks of Peloponnesus, to the number only of 4000, made head against the Persian army consisting of 3,000,000. The other related to the Spartans in particular, and was composed by the poet Simonides, to this purport :—‘ Go, passenger, and acquaint the Spartans that we died here in obedience to their just commands.’ At those tombs a funeral oration was yearly pronounced in honor of the dead heroes, and public games performed with great solemnity, wherein none but the Lacedæmonians and Thespians had any share, to show that they alone were concerned in the glorious defence of Thermopylæ.

At the end of the seventy-seventh Olympiad, a most dreadful earthquake happened at Sparta, in which, according to Diodorus, 20,000 persons lost their lives ; and Plutarch tells us that only five houses were left standing in the whole city. On this occasion the Helotes or slaves, whom the Spartans had all along treated with the utmost cruelty, attempted to revenge themselves by taking up arms, and marching directly to the ruins of the city, in hopes of cutting off at once those who had escaped from the earthquake. But in this they were prevented by the prudence of the Spartan king Archidamus ; for he, observing that the citizens were more desirous of preserving their effects than taking care of their own lives, caused an alarm to be sounded, as if he had known that an enemy was at hand. On this the citizens armed themselves with such weapons as they could come at ; and, having marched a little way from the city, met the Helotes, whom they soon compelled to retire. The latter, however, knowing that they had now no mercy to expect from those who had already treated them with such cruelty, resolved to defend themselves to the last. Having therefore seized a sea-port town in Messenia, they thence made such incursions into the Spartan territories that they compelled those imperious masters to ask assistance from the Athenians. This was immediately

granted ; but, when the Spartans saw that the skill of the Athenians in besieging towns was much greater than their own, they became jealous, and dismissed their allies, telling them that they had now no farther occasion for their services. On this the Athenians left them in disgust ; and as the Helotes and the Messenians did not choose to engage with a Spartan army in the field, but took shelter in their fortified places, the war was protracted for ten years and upwards. At last the Helotes were reduced to their former misery ; and the Messenians were obliged to leave Peloponnesus, on pain of being made slaves also. These poor people were then received by the Athenians, who granted them Naupactus for their residence, and afterwards brought them back to a part of their own country, whence, in the course of the Peloponnesian war, they had driven the Spartans. In the year 431 B. C. the Peloponnesian war commenced. It ended most unfortunately for the Athenians ; their city being taken and dismantled. Thus were the Spartans raised to the highest pitch of glory ; and in the reign of Agesilaus II. they seemed to be on the point of subverting the Persian empire. But here their good fortune and their views of empire were suddenly checked. Agesilaus had carried on the war in Asia with the greatest success ; and, as he would hearken to no terms of accommodation, a Persian governor named Tithrastes, having first attempted in vain to bribe the king, despatched Timocrates the Rhodian with fifty talents into Greece, in order to try whether he could there meet with any persons less incorruptible than the Spartan monarch. This agent found many who inclined to accept his offers ; particularly in Thebes, Corinth, and Argos. By distributing the money properly he inflamed the inhabitants of these cities against the Spartans ; and the Thebans came into his terms with the utmost readiness. But as they saw that their antagonists would not of their own accord break with any of the states of Greece, and did not choose to begin the war themselves, they persuaded the Locrians to invade a small district which lay in dispute betwixt the Phocians and themselves. On this the Phocians invaded Locris ; the Locrians applied to the Thebans, and the Phocians to the Spartans. The latter were glad of an opportunity of breaking with the Thebans, but met with a much warmer reception than they expected. Their old general Lysander, who had reduced Athens, was defeated and killed, with the loss of 1000 men : on which disaster Agesilaus was recalled, and obliged to relinquish all hopes of conquering the Persians. His return changed the fortune of the war so much, that all the states began to grow weary of a contest from which nobody derived any advantage except the king of Persia. In a short time a treaty was concluded, known in history by the name of the peace of Antalcidas. The terms of this treaty were highly disadvantageous and dishonorable to the Greeks ; for even the Spartans, though successful in Greece, had lost a battle at sea with the Persian fleet under Conon the Athenian, which entirely broke their power in Asia. See PERSIA.

By the peace of Antalcidas, the government of

Boeotia was taken from the Thebans, which they had long enjoyed ; and by this they were so much provoked that at first they absolutely refused to accede to the treaty ; but, as Agesilaus made great preparations to invade them, they thought proper at last to comply. However, a new war soon commenced, which threatened the total subversion of the Spartan state. As, by the peace of Antalcidas, the king of Persia had in a manner guaranteed the sovereignty of Greece to Sparta, this republic very soon began to exercise its power to the utmost extent. The Mantineans were the first who felt the weight of their resentment, although they had been their allies and confederates. To have a pretence for making war against them, they commanded them to quit their city, and to retire into five old villages which, they said, had served their forefathers, and where they would live in peace themselves, and give no umbrage to their neighbours. This being refused, an army was sent against them to besiege their city. The siege was continued through the summer with very little success on the part of the Spartans ; but, having during the winter dammed up the river on which the city stood, the water rose to such a height as either to overflow or throw down the houses ; which compelled the Mantineans to submit to the terms prescribed to them, and retire into the old villages. The Spartan vengeance fell next on the Philiasians and Olynthians, whom they forced to come into such measures as they thought proper. After this they fell on the Thebans ; and, by attempting to seize on Piræum, drew the Athenians also into the quarrel. But here their career was stopped : the Thebans had been taught the art of war by Chabrias the Athenian ; so that even Agesilaus himself took the command of the Spartan army in vain. At sea they were defeated by Timotheus the son of Conon ; and by land the battle of Leuctra put an end to the superiority which Sparta had held over Greece for nearly 500 years. See LEUCTRA.

After this dreadful defeat, the Spartans had occasion to exert all their courage and resolution. The women and nearest relations of those who were killed in battle, instead of spending their time in lamentations, shook each other by the hand ; while the relations of those who had escaped from the battle hid themselves among the women ; or, if they were obliged to go abroad, they appeared in tattered clothes, with their arms folded, and their eyes fixed on the ground. It was a law among the Spartans that such as fled from battle should be degraded from their honors, should be constrained to appear in garments patched with divers colors, to wear their beards half shaved, and to suffer any to beat them who pleased, without resistance. On this occasion, however, this law was dispensed with ; and Agesilaus, by his prudent conduct, kept up the spirits of the people, at the same time that by his skill in military affairs he checked the progress of the enemy. Yet, during the lifetime of Epaminondas the Theban general, the war went on greatly to the disadvantage of the Spartans ; but he being killed, at the battle of Mantinea, all parties became quickly desirous of peace. Agesilaus did not long survive him ; and with him,

we may say, perished the glory of Sparta. Soon after this all the states of Greece fell under the power of Alexander the Great ; and the Spartans, as well as the rest, having become corrupt, and lost their martial spirit, became a prey to domestic tyrants, and to foreign invaders. They maintained their ground, however, with great resolution against the celebrated Pyrrhus king of Epirus ; whom they repulsed for three days successively, though not without assistance from one of the captains of Antigonus. Soon after this, king Agis III., perceiving the universal degeneracy that had taken place, made an attempt to restore the laws and discipline of Lycurgus, by which he supposed the state would be restored to its former glory. But, though at first he met with some appearance of success, he was in a short time most iniquitously tried and condemned by the ephori as a traitor to his country. See *Agis III.* Cleomenes III., however, accomplished the reformation which Agis had attempted in vain. He suppressed the ephori : cancelled all debts ; divided the lands equally, as they had been in the time of Lycurgus ; and put an end to the luxury which prevailed among the citizens. But at last he was overborne by the number of enemies which surrounded him ; and, being defeated in battle by Antigonus, he fled to Egypt, where he and his family were kindly entertained by Ptolemy Euergetes ; but upon his death Philopater put him in jail, on which the old king killed himself.

With Cleomenes fell every hope of retrieving the affairs of Sparta. The citizens indeed attempted a reform, by dethroning their two last kings, Lycurgus II. and Agesipolis III., abolishing the binarchy, and establishing a republic ; but their new republic was very short-lived ; the tyrant Machanidas seized the power and made it a monarchy once more, or rather an absolute despotism, about A.A.C. 210. Machanidas, like all tyrants, detesting every thing that favored of liberty, made war upon the Achæans, who were then joined in a league for the freedom of Greece ; and led a body of Spartans unwillingly against them ; but Philopœmen, coming up with him at the memorable town of Mantinea, rendered that place once more famous for a second defeat of the Spartans, and killed the tyrant Machanidas with his own hand in the battle, about A.A.C. 206. The death of this tyrant, however, did not give liberty to Sparta. Nabis, a tyrant who in barbarity exceeded all the monsters who had gone before him, assumed the despotism and held it for fourteen years. See *NABIS.* To strengthen himself, he formed an alliance with the Romans, and joined the forces of Flaminius against the Achæans ; but, though he gained one naval victory over Philopœmen at sea, that general soon after gave him a total overthrow by land ; Nabis fell in the battle, and Philopœmen demolished the walls of Sparta, A.A.C. 192. The Spartans, however, reckoned themselves so much indebted to Philopœmen, for delivering them from their tyrant, that they sold Nabis's palace and furniture, made a present of the value (120 talents) to the Achæan general, and soon after joined the league, which their tyrants had hitherto compelled them to oppose. See *PHILO-*

*PŒMEN.* With all their bravery, however, they fell under the Roman yoke, in common with the rest of Greece, after the destruction of Corinth, A.A.C. 147. And about A.C. 71 their country was reduced by Vespasian to the form of a Roman province. Upon the division of the empire, it naturally fell to the Greek emperors, under whom it was subjected to despots, honorably so called, who acknowledged the authority of the emperors, and often were their relations. The last of these was Thomas Palæologus, who was dispossessed by Mahomet II. in 1453. Sparta or Laconia, now called Misitra, was afterwards conquered by the Venetians in 1686 ; but the Turks recovered it in 1715.

As the *character*, manners, and customs, of the Spartans, were founded on the laws of Lycurgus, they may best be learned from a view of these laws. The institutions of Lycurgus were divided into twelve tables. These respected, I. Religion : II. The Division of Land : III. Citizens and their children : IV. Celibacy and Marriage : V. Education : VI. Diet, Clothing, &c. : VII. Obedience : VIII. Learning : IX. Exercises : X. Money : XI. Courts of Justice : XII. Military service. The laws respecting these we shall consider in our usual lexicographical order.

Celibacy in men was infamous, and punished in a most extraordinary manner ; for the old bachelor was constrained to walk naked, in the depth of winter, through the market-place : while he did this, he was obliged to sing a song in disparagement of himself ; and he had none of the honors paid him which otherwise belonged to old age, it being held unreasonable that the youth should venerate him who was resolved to leave none of his progeny behind him, to reverre them when they grew old in their turn. The time of marriage was also fixed ; and, if a man did not marry when he was of full age, he was liable to an action ; as were such also as married above or below themselves. Such as had three children had great immunities ; such as had four were free from all taxes whatsoever. Virgins were married without portions ; because neither want should hinder a man, nor riches induce him, to marry contrary to his inclinations. When a marriage was agreed on, the husband committed a kind of rape upon his bride. Husbands went for a long time, secretly and by stealth, to the beds of their wives, that their love might not be quickly and easily extinguished. Husbands were allowed to lend their wives ; but the kings were forbidden to take this liberty. Some other laws of the like nature there were, which, as they were evidently against modesty, so they were far from producing the end for which Lycurgus designed them ; since, though the men of Sparta were generally remarkable for their virtue, the Spartan women were as generally decried for their boldness and contempt of decency.

The citizens were to be neither more nor less than the number of city lots ; and, if at any time there happened to be more, they were to be led out in colonies. As to children, their laws were equally harsh and unreasonable ; for a father was directed to carry his new-born infant to a certain place, where the gravest men of his

tribe looked upon the infant; and, if they perceived its limbs straight, and thought it had a wholesome look, then they returned it to its parents to be educated; otherwise it was thrown into a deep cavern at the foot of the mountain Taygetus. This law seems to have had one very good effect, viz. making women very careful, when they were with child, of either eating, drinking, or exercising, to excess: it made them also excellent nurses; for which they were in mighty request throughout Greece. Strangers were not allowed to reside long in the city, that they might not corrupt the Spartans by teaching them new customs. Citizens were also forbidden to travel, for the same reason, unless the good of the state required it. Such as were not bred up in their youth according to the law, were not allowed the liberty of the city, because they held it unreasonable that one who had not submitted to the laws in his youth should receive the benefit of them when a man. They never preferred any stranger to a public office; but, if at any time they had occasion for a person not born a Spartan, they first made him a citizen, and then preferred him.

Such of the laws of Sparta as related to courts of justice may be brought under the eleventh table. Thirty years must have passed over the head of him who had a right to concern himself in juridical proceedings. Young men were thought unfit for them; and it was even held indecent, and of ill report, for a man to have any fondness for law-suits, or to be busying himself at the tribunals, when he had no affairs there of his own. By these rules Lycurgus thought to shut out litigiousness, and to prevent that multiplicity of suits which is always scandalous in a state. As young people were not permitted to enquire about the laws of other countries, and as they were hindered from hearing judicial proceedings in their courts, so they were likewise forbidden to ask any questions about, or to endeavour to discover, the reasons of the laws by which themselves were governed. Obedience was their duty; and to that alone they would have them kept. Men of abandoned characters, or who were notoriously of ill fame, lost all right of giving their votes in respect of public affairs, or of speaking in public assemblies; for they would not believe that an ill man in private life could mean his country better than he did his neighbour.

As the poor ate as well as the rich, so the rich could wear nothing better than the poor: they neither changed their fashion nor the materials of their garments; they were made for warmth and strength, not for gallantry and show: and to this custom even their kings conformed, who wore nothing gaudy in right of their dignity, but were contented that their virtue should distinguish them rather than their clothes. The youths wore a tunic till they were twelve years old; afterwards they had a cloak given them, which was to serve them a year: and their clothing was, in general, so thin, that a Lacedæmonian vest became proverbial. Boys were always used to go without shoes; but, when they grew up, they were indulged with them, if the manner of life they led required it; but they were always

inured to run without them, as also to climb up and slip down steep places with bare feet: nay, the very shoe they used was of a particular form, plain and strong. Boys were not permitted to wear their hair; but, when they arrived at the age of twenty, they suffered their hair and beard to grow. Baths and anointing were not much in use among the Lacedæmonians; the river Eurotas supplied the former, and exercise the latter. In the field, however, their sumptuary laws did not take place so strictly as in the city; for, when they went to war, they wore purple habits; they put on crowns when they were about to engage the enemy; they had also rings, but they were of iron; which metal was most esteemed by this nation. Young women wore their vests or jerkins only to their knees, or, as some think, not quite so low; a custom which both Greek and Roman authors censure as indecent. Gold, precious stones, and other costly ornaments, were permitted only to common women; which permission was the strongest prohibition to women of virtue, or who affected to be thought virtuous. Virgins went abroad without veils, with which married women, on the contrary, were always covered. In certain public exercises, in which girls were admitted as well as boys, they were both obliged to perform naked. Plutarch apologises for this custom, urging, that there could be no danger from nakedness to the morals of youth whose minds were fortified and habituated to virtue. One of Lycurgus's principal views in his institutions was to eradicate the very seeds of civil dissension in his republic. Hence proceeded the equal division of estates enjoined by him; hence the contempt of wealth, and the neglect of other distinctions, as particularly birth, he considering the people of his whole state as one great family; distinctions which, in other commonwealths, frequently produce tumults and confusions that shake their very foundation.

Lycurgus divided all the country of Laconia into 30,000 equal shares: the city of Sparta he divided into 9000 as some say, into 6000 as others say; and, as a third party will have it, into 4500. The intent of the legislator was that property should be equally divided amongst his citizens, so that none might be powerful enough to oppress his fellows, or any be in such necessity, as to be therefrom in danger of corruption. With the same view he forbade the buying or selling these possessions. In this his views coincided entirely with the divine law given to the Israelites. If a stranger acquired a right to any of these shares, he might quietly enjoy it, provided he submitted to the laws of its republic. The city of Sparta was unwalled; Lycurgus trusting it rather to the virtue of its citizens than to the art of masons. As to the houses, they were very plain; for their ceilings could only be wrought by the axe, and their gates and doors only by the saw; and their utensils were to be of a like stamp, that luxury might have no instruments among them.

It was the care of Lycurgus that, from their very birth, the Lacedæmonians should be inured to conquer their appetites: for this reason he directed that nurses should accustom their chil-

oren to spare meals, and now and then to fasting: that they should carry them, when twelve or thirteen years old, to those who should examine their education, and who should carefully observe whether they were able to be in the dark alone, and whether they had got over all other follies and weaknesses incident to children. He directed that children of all ranks should be brought up in the same way; and that none should be more favored in food than another, that they might not, even in their infancy, perceive any difference between poverty and riches, but consider each other as equals, and even as brethren, to whom the same portions were assigned, and who, through the course of their lives, were to fare alike; the youths alone were allowed to eat flesh; older men ate their black broth and pulse; the lads slept together in chambers, and after a manner somewhat resembling that still in use in Turkey for the Janizaries; their beds, in the summer, were very hard, being composed of the reeds plucked by the hand from the banks of the Eurotas; in winter their beds were softer, but by no means downy, or fit to indulge immoderate sleep. They ate all together in public; and in case any abstained from coming to the tables they were fined. It was likewise strictly forbidden for any to eat or drink at home before they came to the common meal; even then each had his proper portion, that every thing might be done there with gravity and decency. The black broth was the great rarity of the Spartans. It was composed of salt, vinegar, blood, &c., which, in our times, would be esteemed a very unsavory soup. If they were moderate in their eating, they were so in their drinking also; thirst was the sole measure thereof; and no Lacedæmonian ever thought of drinking for pleasure: as for drunkenness, it was both infamous and severely punished; and, that young men might perceive the reason, slaves were compelled to drink to excess, that the beastliness of the vice might appear. When they retired from the public meal, they were not allowed any torches or lights, because it was expected that men who were perfectly sober should be able to find their way in the dark: and, besides, it gave them a facility of marching without light; a thing wonderfully useful to them in time of war.

In these all the Greeks were extremely careful, but the Lacedæmonians in a degree beyond the rest: for if a youth, by his corpulence or any other means, became unfit for these exercises, he underwent public contempt at least, if not banishment. Hunting was the usual diversion of their children; nay, it was made a part of their education, because it had a tendency to strengthen their limbs, and to render those who practised it supple and fleet: they likewise bred up dogs for hunting with great care. They had a kind of public dances, in which they exceedingly delighted, and which were common alike to virgins and young men: indeed, in all their sports, girls were allowed to divert themselves with the youths; insomuch that, at darting, throwing the quoit, pitching the bar, and such like robust diversions, the women were as dexterous as the men. For the manifest oddity of this proceeding, Lycurgus assigned no other

reason than that he sought to render women, as well as men, strong and healthy, that the children they brought forth might be so too. Violent exercises, and a laborious kind of life, were only enjoined the youth; for, when they were grown up to men's estate, that is, were upwards of thirty years old, they were exempted from all kinds of labor, and employed themselves wholly either in affairs of state or in war. They had a method of whipping, at a certain time, young men in the temple of Diana, and about her altar; which, however palliated, was certainly unnatural and cruel. It was esteemed a great honor to sustain these flagellations without weeping, groaning, or showing any sense of pain; and the thirst of glory was so strong in these young minds that they very frequently suffered death without shedding a tear or breathing a sigh. A desire of overcoming all the weaknesses of human nature, and thereby rendering his Spartans not only superior to their neighbours, but to their species, runs through many of the institutions of Lycurgus; which principle, if well attended to, thoroughly explains them, and without attending to which, it is impossible to form any just idea of them.

The plainness of their manners, and their being so very much addicted to war, made the Lacedæmonians less fond of the sciences than the rest of the Greeks. A soldier was the only reputable profession in Sparta; a mechanic or husbandman was thought a low fellow. The reason of this was, that they imagined professions that required much labor, some constant posture, being continually in the house, or always about a fire, weakened the body and depressed the mind: whereas a man brought up hardly was equally fit to attend the service of the republic in time of peace, and to fight its battles when engaged in war. Such occupations as were necessary to be followed for the benefit of the whole, as husbandry, agriculture, and the like, were left to their slaves, the Helotes; but for curious arts, and such as served only to luxury, they would not so much as suffer them to be introduced into their city; in consequence of which, rhetoricians, augurs, bankers, and dealers in money, were shut out. The Spartans admitted not any of the theatrical diversions among them; they would not bear the representation of evil, even to produce good; but other kinds of poetry were admitted, provided the magistrates had the perusal of pieces before they were handed to the public. Above all things, they affected brevity of speech, and accustomed their children, from their very infancy, never to express themselves in more words than were strictly necessary; whence a concise sentiment expressed in few words is to this day styled laconic. In writing they used the same conciseness; of which we have a signal instance in a letter of Archidamus to the Eleans, when he understood that they had some thoughts of assisting the Arcadians. It ran thus: 'Archidamus to the Eleans: it is good to be quiet.' And therefore Epaminondas thought that he had reason to glory in having forced the Spartans to abandon their monosyllables, and to lengthen their discourses. The greatest part of their

education consisted in giving their youth right ideas of men and things: the iren or master proposed questions, and either commended the answers that were made him, or reproved such as answered weakly. In these questions, all matters, either of a trivial or abstruse nature, were equally avoided; and they were confined to such points as were of the highest importance in civil life; such as, Who was the best man in the city? Wherein lay the merit of such an action? and, Whether this or that hero's fame was well founded? Harmless raillery was greatly encouraged; and this, joined to their short manner of speaking, rendered laconic replies universally admired. Music was much encouraged; but in this, as in other things, they adhered to that which had been in favor with their ancestors; nay, they were so strict therein, that they would not permit their slaves to learn either the tune or the words of their most admired odes; or, which is all one, they would not permit them to sing them if they had learned them. Though the youth of the male sex were much cherished and beloved, as those that were to build up and continue the future glory of the state, yet in Sparta it was a virtuous and modest affection, untinged with that sensuality which was so scandalous at Athens. The good effects of this part of Lycurgus's institutions were seen in the union that reigned among his citizens; and which was so extraordinary, that, even in cases of competition, it was hardly known that rivals bore ill-will to each other; but, on the contrary, their love to the same person begat a secondary friendship among themselves, and united them in all things which might be for the benefit of the person beloved.

Till a man was thirty years old, he was not capable of serving in the army, as the best authors agree; though some think that the military age is not well ascertained by ancient writers. They were forbidden to march at any time before the full moon; the reason of which law is very hard to be discovered, if indeed it had any reasons at all, or was not rather founded on some superstitious opinion, that this was a more lucky conjuncture than any other. They were likewise forbidden to fight often against the same enemy; which was one of the wisest maxims in the political system of Lycurgus: and Agesilaus, by offending against it, destroyed the power of his country, and lost her that authority which for many ages she maintained over the rest of Greece; for, by continually warring against the Thebans, to whom he had an inveterate hatred, he at last beat them into the knowledge of the art of war, and enabled them, under the command of Epaminondas, to maintain for a time the principality of Greece. Maritime affairs they were forbidden to meddle with, though the necessity of things compelled them, in process of time, to transgress this institution, and by degrees to transfer to themselves the dominion of the sea as well as of the land; but, after the Peloponnesian war, they again neglected naval affairs, from a persuasion that sailors and strangers corrupted those with whom they conversed. As they never fortified Sparta, they were not ready to undertake sieges; fighting in

the field was their proper province, and, while they could overcome their enemies there, they rightly conceived that nothing could hurt them at home. In time of war, they relaxed somewhat of their strict manner of living, in which they were singular. The true reason for this was, in all probability, that war might be less burdensome to them; for, as we have more than once observed, a strong desire to render them bold and warlike was the reigning passion of their legislator. They were forbidden to remain long encamped in the same place, as well to hinder their being surprised, as that they might be more troublesome to their enemies, by wasting every corner of their country. They slept all night in their armour; but their outguards were not allowed their shields, that, being unprovided of defence, they might not dare to sleep. In all expeditions they were careful in the performance of religious rites; and, after their evening meal was over, the soldiers sung together hymns to their gods. When they were about to engage, the king sacrificed to the Muses, that, by their assistance they might be enabled to perform deeds worthy of being recorded to latest times. Then the army advanced in order to the sound of flutes which played the hymn of Castor. The king himself sung the paean, which was the signal to charge. This was done with all the solemnity imaginable; and the soldiers were sure either to die or conquer: indeed they had no other choice; for if they fled they were infamous, and in danger of being slain, even by their own mothers, for disgracing their families. In this consisted all the excellency of the Spartan women, who, if possible, exceeded in bravery the men, never lamenting over husbands of sons, if they died honorably in the field; but deplored the shame brought on their house, if either the one or the other escaped by flight. The throwing away a shield also induced infamy; and, with respect to this, mothers, when they embraced their departing sons, were wont to caution them, that they should either return armed as they were, or be brought back so when they were dead; for such as were slain in battle were nevertheless buried in their own country. When they made their enemies fly, they pursued no longer than till victory was certain; because they would seem to fight rather for the honor of conquering, than of putting their enemies to death. According to their excellent rules of war, they were bound not to spoil the dead bodies of their enemies; but in process of time, this, and indeed many other of their most excellent regulations, fell into desuetude. He who overcame by stratagem offered up an ox to Mars; whereas he who conquered by force, offered up only a cock: the former being esteemed more manly than the latter. After forty years service, a man was, by law, no longer required to go into the field: and consequently, if the military age was thirty, the Spartans were not held invalids till they were seventy.

Gold and silver were, by the constitutions of Lycurgus, made of no value in Sparta. He was so well apprised of the danger of riches that he made the very possession of them venal; but as there was no living without some sort of money,

that is, some common measure or standard of the worth of things, he directed an iron coinage, whereby the Spartans were supplied with the useful money, and at the same time had no temptation to covetousness afforded them; for a very small sum was sufficient to load a couple of horses, and a great one must have been kept in a barn or warehouse. The coming in of all foreign money was also prohibited, that corruption might not enter under the name of commerce. The most ancient method of dealing, viz. by barter, or exchange of one commodity for another, was preserved by law in Sparta long after it had been out of date every where else. Interest was a thing forbidden in the Spartan commonwealth; where they had also a law against alienation of lands, accepting presents from foreigners, even without the limits of their own country, and when their authority and character might well seem to excuse them.

Though the Spartans were always free, yet it was with this restriction, that they were subservient to their own laws, which bound them as strictly in the city as soldiers in other states were bound by the rules of war in the camp. In the first place, strict obedience to their superiors was the great thing required in Sparta. This they looked upon as the very basis of government, without which neither laws nor magistrates availed much. Old age was an indubitable title to honor in Sparta; to the old men the youth rose up whenever they came into any public place; they gave way to them when they met them in the streets, and were silent whenever their elders spoke. As all children were looked upon as the children of the state, so all the old men had the authority of parents; they reprehended whatever they saw amiss, not only in their own, but in other people's children; and by this method Lycurgus provided that, as youth are every where apt to offend, they might be nowhere without a monitor. The laws went still further; if an old man was present where a young one committed a fault, and did not reprove him, he was punished equally with the delinquent. Amongst the youths there was one of their own body, or at most two years older than the rest, who was styled iren; he had authority to question all their actions, to look strictly to their behaviour, and to punish them if they did amiss; neither were their punishments light, but, on the contrary, very severe, whereby the youth were made hardy, and accustomed to bear stripes and rough usage. Silence was a thing highly commended at Sparta, where modesty was held to be a most becoming virtue in young people; nor was it restrained only to their words and actions, but to their very looks and gestures: Lycurgus having particularly directed that they should look forward, or on the ground, and that they should always keep their hands within their robes. A stupid inconsiderate person, one who would not listen to instruction, but was careless of whatever the world might say of him, the Lacedemonians treated as a scandal to human nature; with such a one they would not converse, but threw him off as a rotten branch and worthless member of society.

The statues of all the gods and goddesses were

represented in armour, even to Venus herself—the reason of which was that the people might conceive a military life the most noble and honorable, and not attribute, as other nations did, sloth and luxury to the gods. As to sacrifices they consisted of things of very small value; for which Lycurgus himself gave this reason,—That want might never hinder them from worshipping the gods. They were forbidden to make long or rash prayers to the heavenly powers, and were enjoined to ask no more than that they might live honestly and discharge their duty. Graves were permitted to be made within the bounds of the city, contrary to the custom of most of the Greek nations; nay, they buried close by their temples, that all degrees of people might be made familiar with death, and not conceive it such a dreadful thing as it was generally esteemed elsewhere; on the same account the touching of dead bodies, or assisting at funerals, made none unclean, but were held to be as innocent and honorable duties as any other. There was nothing thrown into the grave with the dead body; magnificent sepulchres were forbidden; neither was there so much as an inscription, however plain or modest, permitted. Tears, sighs, outcries, were not allowed in public, because they were thought dishonorable in Spartans, whom their lawgiver would have to bear all things with equanimity. Mourning was limited to eleven days; on the twelfth the mourner sacrificed to Ceres and threw aside his weeds. In favor of such as were slain in the wars, however, and of women who devoted themselves to a religious life, there was an exception allowed as to the rules before mentioned; for such had a short and decent inscription on their tombs. When a number of Spartans fell in battle, at a distance from their country, many of them were buried together under one common tomb; but, if they fell on the frontiers of their own state, then their bodies were carefully carried back to Sparta and interred in their family sepulchres.

Many authors, both ancient and modern, have celebrated the constitution and government of Sparta as superior to those of all other nations. Upon this subject we need only quote the sentiments of the reverend and ingenious David Williams, who, in his *Claims of Literature*, p. 33, states the comparative merits of the constitution of Sparta and Athens in few words:—‘ How different (says he) the state of society in Athens and Lacedemon! branches of a common stock and inhabiting the same climate! In the one, the admiration of genius and the love of literature heightened into delirium; in the other, all talents but those of war checked and extinguished. In Athens, the lives of men of genius were those of gods; in Lacedæmon, glory and fame could be obtained only in blood.’

SPARTA, the daughter of Eurotas and wife of Lacedemon who gave their name to Sparta.

SPARTACUS, a Thracian shepherd who commenced gladiator, and was one of those kept in the house of Lentulus, at Capua, who it would seem had been slaves: for, having escaped with thirty of his associates, they soon increased to 10,000 men, and raised a formidable rebellion against the Romans. Emboldened by increasing

numbers they not only plundered the country of Campania, but attacked the Roman army under the two consuls and defeated them. At last Crassus was sent against them with dubious hopes, and after a very bloody battle defeated them; Spartacus being killed in battle upon heaps of Romans whom he had slain, A. A. C. 31, with his own hand. See ROME. In this battle no fewer than 40,000 of the rebels were slain.

**SPARTÆ, or SPARTI,** in the mythology, the men who sprang from the dragon's teeth which Cadmus sowed. See CADMUS.

**SPARTI.** See SPARTÆ.

**SPARTIANUS** (*Aelius*), a Latin historian, who flourished about A. D. 290, and wrote the lives of all the Roman emperors from Julius Caesar to Dioclesian. He was a relation of Dioclesian, and dedicated his work to him. Of these lives only six are extant; viz. those of Adrian, Verus, D. Julianus, Septimius Severus, Caracalla, and Geta; which are published among the *Scriptores Historiae Augustae*.

**SPARTIUM**, broom, in botany, a genus of plants belonging to the class of diadelphia, and order of decandria; and in the natural system arranged under the thirty-second order, papilio-nacea. The stigma is longitudinal and woolly above; the filaments adhere to the germen. The calyx is produced downwards. There are sixteen species; viz. 1. *S. angulatum*; 2. *aphyllum*; 3. *complicatum*; 4. *contaminatum*. 5. *cystoides*; 6. *junceum*; 7. *monospermum*; 8. *patens*; 9. *purgans*; 10. *radiatum*; 11. *scoparium*; 12. *scorpius*; 13. *sepiarium*; 14. *sphaerocarpus*; 15. *spinosum*; and 16. *supranulum*. All these are exotics chiefly from Spain, Portugal, Italy, &c., except the scoparium.

1. *S. junceum*, Spanish broom, grows naturally in the southern provinces of France as well as other parts of the south of Europe. It grows on the poorest soils, on the steepest declivities of the hills, in a stony soil, where hardly any other plant could vegetate. In a few years it makes a vigorous shrub; insinuating its roots between the interstices of the stones, it binds the soil and retains the small portion of vegetable earth scattered over these hills which the autumnal rains would otherwise wash away. It is most easily raised from seed, which is usually sown in January, after the ground has received a slight dressing. This shrub serves two useful purposes. Its branches yield a thread of which linen is made, and in winter support sheep and goats. In manufacturing thread from broom the youngest plants are cut in August, or after harvest, and gathered together in bundles, which at first are laid in the sun to dry; they are then beaten with a piece of wood, washed in a river, and left to steep in the water for four hours. The bundles thus prepared are taken to a little distance from the water and laid in a hollow place made for them, where they are covered with fern or straw, and remain thus to steep for eight or nine days; during which time all that is necessary is to throw a little water once a day on the heap without uncovering the broom. After this the bundles are well washed, the green rind of the plant in epidermis comes off, and the

fibrous part remains; each bundle is then beaten with a wooden hammer upon a stone to detach all the threads, which are at the same time carefully drawn to the extremity of the branches. After this operation the faggots are untied and spread upon stones till they are dry. The twigs must not be peeled till they are perfectly dry; they are then dressed with the comb, and the threads are separated according to their fineness and spun upon a wheel. The lines made of this thread serve various purposes in rural economy. The coarsest is employed in making sacks and other strong cloths for carrying grain or seeds. Of the finest is made bed, table, and body linen. The peasants in several places use no other; for they are unacquainted with the culture of hemp or flax, their soil being too dry and too barren for raising them. The cloth made with the thread of the broom is very useful, it is as soft as that made of hemp; and it would perhaps look as well as that made of flax if it were more carefully spun. It becomes white in proportion as it is steeped. The price of the finest thread is generally about a shilling a pound. The other use of this broom is to feed sheep and goats in winter. In the mountains of the ci-devant Languedoc these animals have no other food from November to April, except the leaves of trees preserved. The branches of this broom, therefore, are a resource the more precious, that it is the only fresh nourishment which at that season the flocks can procure, and they prefer it at all times to every other plant. In fine weather the sheep are led out to feed on the broom where it grows; but in bad weather the shepherds cut the branches and bring them to the sheep folds. But the continued use of this food produces inflammation in the urinary passages. This is easily removed by cooling drink, or a change of food, or by mixing the broom with something else. It differs much from the broom that is common every where in the north of Europe, though this too, in many places, is used for food to cattle. Both produce flowers that are very much resorted to by bees, as they contain a great quantity of honey juice. This should be another inducement to cultivate the Spanish broom.

2. *S. scoparium*, the common broom, has ternate solitary leaves; the branches angular and without prickles. It is used for various purposes. It has been of great benefit in dropsical complaints. The manner in which Dr. Cullen administered it was this:—He ordered half an ounce of fresh broom tops to be boiled in a pound of water till one-half of the water was evaporated. He then gave two table spoonfuls of the decoction every hour till it operated both by stool and urine. By repeating those doses every day, or two days, he says some dropsies have been cured. Dr. Mead relates that a dropsical patient, who had taken the usual remedies and been tapped three times without effect, was cured by taking half a pint of the decoction of green broom tops with a spoonfull of whole mustard seed every morning and evening. An infusion of the seeds drunk freely (says Mr. Withering) has been known to produce similar happy effects; but whoever expects these effects to follow in every dropsical case will be greatly

deceived. I knew them succeed in one case that was truly deplorable; but out of a great number of cases in which the medicine had a fair trial this proved a single instance.' The flower buds are in some countries pickled and eaten as capers; and the seeds have been used as a bad substitute for coffee. The branches are used for making besoms and tanning leather. They are also used instead of thatch to cover houses. The old wood furnishes the cabinet-maker with beautiful materials for veneering. The tender branches are in some places mixed with hops for brewing, and the macerated bark may be manufactured into cloth.

**SPARUS**, in ichthyology, gilthead; a genus of animals belonging to the class of pisces and the order of thoraci. The fore-teeth and dog-teeth are very strong; the grinders are obtuse and thick set; the lips are folded over; there are five rays in the gill membrane; and the opercula are scaly; the body is compressed; the lateral line is crooked behind; and the pectoral fins are roundish. Gmelin enumerates thirty-nine species, of which only three are found in the British seas; viz. 1. *S. auratus*, the gilt-bream. The head and sides of it are gilt, and there is a golden spot between the eyes shaped like a half moon; there is also a black purple spot on the gills; and it weighs from eight pounds to ten pounds. It is one of the pisces saxatiles, or fish that haunt deep waters on bold rocky shores. They feed chiefly on shell-fish which they comminute with their teeth before they swallow, the teeth of this genus in particular being adapted for that purpose: the grinders are flat and strong, like those of certain quadrupeds; besides which there are certain bones in the lower part of the mouth that assist in grinding their food. They are coarse: they were known to the Romans who did not esteem them unless they were fed with Lucrine oysters, as Martial informs us, lib. xiii. ep. 90. In the account of captain Cook's voyage, published by Mr. Foster, we are informed that the giltheads are sometimes poisonous, owing to their feeding on certain species of the raja which have an extremely acrid and stimulating property. 2. *S. dentatus*, toothed sea-bream, is black above and of a silvery appearance below. The eyes and gills are very large. There are nine rows of teeth in the lower jaw and one in the upper. 3. *S. pagrus*, the sea-bream, is of a reddish color. The skin forms a sinus at the roots of the dorsal and anal fins. The body is broad; the back and belly ridged. There is only one dorsal fin.

**SPASM**, n. s. Fr. *spasme*; Gr. *σπασμός*. Convulsion; violent and involuntary contraction of any part.

All the maladies

Of ghastly spasm, or racking torture, qualms  
Of heart-sick agony. *Milton.*

Wounds are subject to pain, inflammation, spasm. *Wiseman's Surgery.*

Carminative things dilute and relax; because  
wind occasions a spasm or convulsion in some part. *Arbuthnot.*

**SPASMUS**, from Gr. *σπάω*, to draw, in medicine, is cramp, spasm, or convulsion; an involuntary contraction of the muscular fibres, or that state of the contraction of muscles which is not

spontaneously disposed to alternate with relaxation, is properly termed spasm. When the contractions alternate with relaxation, and are frequently and preternaturally repeated, they are called convulsions. Spasms are distinguished by authors into clonic and tonic spasms. In clonic spasms, which are the true convulsions, the contractions and relaxations are alternate, as in epilepsy; but in tonic spasms the member remains rigid, as in locked jaw.

**SPASMUS CYNICUS**, or sardonic laugh, is a convulsive affection of the muscles of the face and lips on both sides, which involuntarily forces the muscles of those parts into a species of grinning distortion. If one side only be affected, the disorder is nominated *tortura oris*. When the masseter, buccinator, temporal, nasal, and labial muscles, are involuntarily excited to action, or contorted by contraction or relaxation, they form a species of malignant sneer. It sometimes arises from eating hemlock or other acrid poisons, or succeeds to an apoplectic stroke.

**SPAT**, n. s. Sax. *þpatan*. The young shell-fish.

A reticulated film found upon sea-shells, and usually supposed to be the remains of the vesicles of the spat of some sort of shell-fish.

*Woodward on Fossils.*

**SPATHELIA**, in botany, a genus of plants belonging to the class of pentandria, and order of trigynia: CAL. pentaphylloous; the petals are five: CAPS. three-edged and trilocular: SEEDS solitary. There is only one species. *S. simplex*, a native of Jamaica, introduced into the botanic gardens of this country in 1778 by the ingenious Dr. Wright, late of Jamaica.

**SPATIATE**, v. n. Lat. *spatior*. To rove; range; ramble at large. A word not used.

Wonder causeth astonishment, or an immovable posture of the body, caused by the fixing of the mind upon one cogitation, whereby it doth not *spatiare* and transcur. *Bacon.*

Confined to a narrow chamber, he could *spatiare* at large through the whole universe. *Bentley.*

**SPATTER**, v. a. Sax. *þpat*, spit. To sprinkle with dirt, or any thing offensive.

His forward voice now is to speak well of his friend; his backward voice is to *spatter* foul speeches, and to detract. *Shakspeare.*

They, fondly thinking to allay  
Their appetite with gust, instead of fruit  
Chewed bitter ashes, which the offend'd taste  
With spattering noise rejected. *Milton.*

The pavement swam in blood, the walls around  
Were spattered o'er with brains. *Addison.*

**SPATULA**, n. s. Lat. *spatha*, *spathula*. A spatule or slice.

*Spatula* is an instrument used by apothecaries and surgeons in spreading plaisters or stirring medicines together. *Quincy.*

In raising up the hairy scalp smooth with my *spatula*, I could discover no fault in the bone. *Wiseman's Surgery.*

**SPAVIN**, n. s. Fr. *espavent*; Ital. *spavano*. A disease in horses in which a bony excrescence, or crust as hard as a bone, grows on the inside of the hough, not far from the elbow, and is generated of the same matter by which the bones or ligaments are nourished.

They've all new legs and lame ones ; one would take it,  
That never saw them pace before, the spavin  
And springhalt reigned among them. *Shakspeare.*  
If it had been a spavin, and the ass had petitioned  
for another farrier, it might have been reasonable.

*L'Estrange.*

SPAWL, *v. n. & n. s.* } Saxon *rpoetlan*,  
SPAWL'ING, *n. s.* } spit. To throw moisture out of the mouth : the noun substantive corresponding. Disused.

He who does on ivory tables dine,  
His marble floors with drunken *spawlings* shine.

*Dryden.*

Of spittle she lustration makes ;  
Then in the *spawl* her middle finger dips.  
Anoints the temple, forehead, and the lips. *Id.*  
What mischief can the dean have done him,  
That Traulus calls for vengeance on him ?  
Why must he sputter, *spawl*, and slaver it,  
In vain, against the people's favorite ? *Swift.*

SPAWN, *n. s., v. a.*, } Sax. *rpeopan*; Belg.  
SPAWN'ER. [ & *v. n.* } *spene*, *spenne*. The eggs  
of fish or frogs ; any produce : to produce ; generate : issue ; proceed : the spawner is the female fish.

Masters of the people,  
Your multiplying *spawn* how can he flatter  
That's thousand to one good one.

*Shakspeare. Coriolanus.*

Some report a sea-maid *spawned* him. *Shakspeare.*  
God said, let the waters generate  
Reptile, with *spawn* abundant, living soul ! *Milton.*  
The fish having *spawned* before, the fry that goes down hath had about three months growth under ground, when they are brought up again.

*Browne's Travels.*

The barbel, for the preservation of their seed, both the *spawner* and the melter, cover their *spawn* with sand.

*Walton.*

Carp and tench do best together, all other fish being devourers of their *spawn*. *Mortimer.*

'Twas not the *spawn* of such as these  
That dyed with Punick blood the conquered seas,  
And quashed the stern Axacies. *Roscommon.*

This atheistical humour was the *spawn* of the gross superstitions of the Romish church and court.

*Tillotson.*

It is so ill a quality, and the mother of so many ill ones that *spawn* from it, that a child should be brought up in the greatest abhorrence of it. *Locke.*

These ponds, in *spawning* time, abounded with frogs, and a great deal of *spawn*.

*Ray on the Creation.*

What practices such principles as these may *spawn*, when they are laid out to the sun, you may determine.

*Swift.*

The SPAWNING OF FISH is the act of depositing the raw or oviparous matter of the female and of its being impregnated with that of the male. Most sorts of river-fish, and many of those of the sea kind, produce their young in this way. But the impregnation is accomplished in different manners as to the mode of its deposition, according to the nature and habits of the fish. In those fishes which spawn in the more still and shallow waters during the spring and summer seasons, such as the pike, bream, carp, perch, and some other kinds, it would seem to be most commonly the habit to deposit their spawny material on the leaves and vegetables which lie just below the surface of the water :

while in those fishes which cast their *spawn* in the winter season, such as the salmon, trout, herring, and many other sorts, spots and places very near the sources or beginnings of rivers and streams, or the more rapid fresh-water currents, are mostly sought for and fixed upon in this intention, where there is a constant flow of fresh-water, where all stagnation is prevented, and where the water is the most fully aerated, either in its natural situation or during its fall in rain. A proper and suitable degree of warmth may also be necessary in this business. In all other cases the fishes probably deposit their spawny oviparous matters in such situations as are the most suitable to their particular economies, and where there is the necessary heat, as well as where the water is the most fully saturated and impregnated with air, as it is now well ascertained that their impregnated spawny oviparous matters do not produce young ones, any more than seeds vegetate, except where they are freely supplied with air.

The fish in the egg, or *spawn*, derives its oxygen from the air which is dissolved in the water that surrounds it, which, in the first of the above cases, is much supplied by the leaves of the plants on which it is deposited : and in the latter case it is gained from the perpetual flowings of such fresh and fully aerated waters over it, after it has been the most conveniently and effectually impregnated in such shallow parts, currents, and streamlets. It is stated, in speaking of the herring, by the writer of a paper in the third volume of the Transactions of the Highland Society of Scotland, that a very singular notion had been held with regard to the impregnation of the ova or eggs of fish, and which is not by any means the doctrine or hypothesis of yesterday, but which has prevailed, in a greater or less degree, for upwards of 2000 years ; that is, from the days of Herodotus, who, in treating and speaking of the fish in the Nile, makes the following observation :—'At the season of spawning they move in vast multitudes towards the sea, the males lead the way, and emit the engendering principle in their passage ; this the females absorb as they follow, and in consequence conceive, and when their ova are deposited they are consequently matured into fry.'—Beloe's Herod. And, absurd as this supposition and process seem to be, it is asserted, it is said, to be the case by Linnaeus, the most learned of all others in the science of animal history : he tenaciously affirms, it is maintained, that there can be no impregnation of the eggs of any animal out of the body, and that as fish have no organs of generation, that deficiency is made up by adopting the system or notion of Herodotus. This unfounded notion has likewise, it is added, been supported by Kalm, the friend and countryman of the above celebrated naturalist.

At one of the sittings of the National Institute in France, in the year 1799, a memoir was read by the member of instruction at Rouen, on the means and advantages of naturalising the herring, a salt-water fish, in the water of the Seine, near its mouth, &c. ; in which, after noticing the various means by which this may be accomplished, it is observed that 'herrings having been found

ascending from the sea into one river of the American province, while a single individual was never seen in another, separated from the other by a narrow tongue of land, and which also communicated with the sea, a philosopher (Dr. Franklin), took the leaves off some plants on which the herrings had deposited their ova, already fecundated, and conveyed them to the river which was deprived of the annual visit of these fish. The success of the experiment surpassed his expectation, the ova was completely productive, and the following year the river was peopled with a numerous shoal of herrings, which, since that time, continued to frequent it.' Phil. Mag. vol. x. p. 163.

This theory is supposed, by the above writer, to be more rational and not entirely against established facts; though it should be considered, he conceives, that the European herring is not a native of fresh water, and, as he thinks, never will be naturalised in such waters; but that the spawn of fishes, being fecundated in their own waters, may be transported; and when placed in the same homogeneous element upon leaves, sand, or other matters, where the sun and air, as we have seen above, can have free access, or a proper heat, with oxygen air, as has been shown already, received, such ova, raw, or eggs, will be animated and become fry in the same time they would have done in their parent beds, cannot be doubted. This is a practice, it is said, which is well known in China; the missionaries to which have noticed two or three things about it which are singular enough; the first of which is, that in the great river Yangtsee Kyang, not far from the city Kyus-king-fu, in the province of Kyang-si, a prodigious number of barks meet every year to buy the spawn of fishes. About May the people of the country dam up the river for nine or ten leagues together, in several places, with mats and hurdles, leaving only room enough for barks to pass, in order to stop the spawn, which they know how to distinguish at first sight, though the water is scarcely altered; with this water mixed with the spawn they fill several vessels to sell to the merchants, who, at this season, arrive in great numbers to buy and transport it into divers provinces, taking care to have it stirred up from time to time: this water is sold by measure to such as have fish-ponds and pools belonging to their houses. The manner of propagating the gold-fish from spawn is likewise deserving of attentive consideration.

It is supposed by the writer of the above paper that herrings, which cast their spawn in the winter months, without doubt deposit it on our shores; but whether upon gravel, sand, stones, fuci, or other plants, is not well ascertained; but thus far we know, it is said, that it cannot be in deep water, unless we suppose it to have such a buoyancy as to be within reach of the sun's genial influence, and, as has been since shown, that of the free action of the air. It is believed, and the same writer thinks with reason, that it is impregnated by the male after it is emitted by the spawner or spawning-fish. The raw spawn, or eggs, of these fish become animated, it is said, in the month of April. It is noticed, that the fucus palmatus, and, indeed, all the numerous

species of fuci which grow upon our coasts, it is hardly to be doubted, harbour the spawn of fishes; but that the opinion may readily be either confirmed or confuted by the assistance of a glass of moderate magnifying power.

It is also suggested that the cause or reason of the herring's quitting the deep seas is unquestionably that of its casting its spawn in its native water, as the banks and mouths of the rivers where it was produced. And the same is the case with the salmon, the shad, the pilchard, and some others; all of which prefer their natal waters for the purpose of spawning in; and, though the herring and pilchard sometimes deviate from this course, the salmon and shad do it very seldom, being more sober and steady in their attachment to their parent haunts. The heaviest salmon are met with in the large rivers, and the largest herrings in the deep waters, each coast and river producing fish which are different in taste, size, and appearance, as is remarkably seen in the shads and salmons of different rivers and the herrings of different situations. The fry of the herring, as well as of the salmon, when they have attained sufficient size and strength, quit the shallows and make for the deeps: when the shoals of the former enter the bays, and other similar places, the young ones are noticed to take their final departure from them.

*The SPAWNING OR LAYING OF OYSTER-BEDS* in the mouths of the breeding-rivers has been thus described:—The principal rivers in the county of Essex, where this sort of work, or that of breeding oysters, is carried on, according to the Corrected Agricultural Report of that district, are those of the Crouch, the Blackwater, and the Coln; but the first is by far the most certain in produce of any of them. The beds, or layings, are made in the creeks, and other similar places, on the sides or parts which adjoin the mouths openings, or beginnings of these rivers. It is from these rivers that the oyster-layings, or beds, are usually stocked; though some are constantly supplied from Portsmouth, or places in its neighbourhood, being brought in the largest sort of oyster-vessels, not only into this county, but Kent, where they are laid for the ensuing season. The Colchester oyster-beds are chiefly at Wivenhoe, being partly supplied by the Kentish oyster-smacks. The beds, or layings, in these different situations, are likewise, in all probability, supplied or furnished with oysters from several other places on the southern coast of this country, as well as the northern one of France. The breeding-rivers in the county of Essex are said to be very uncertain as to the quantity of oysters they produce; as in some seasons they afford a great quantity, while, at other times, they only produce what is called a good sprinkling, and sometimes there is none at all. But they seldom all produce or fail, it is observed, in the same season.

The oyster-fisheries are of very great importance to the country as well as to particular counties and districts, especially that of Essex; as they employ great numbers of small vessels, require the labor of many men, and afford considerable profit in the produce of food which they supply, as being principally an article of luxury. In the county just mentioned there are

several of these oyster-fisheries. In the Black-water river, and neighbouring parts, there is a considerable fishery of this nature; and West Mersea is one of the principal stations of the dredgers: above thirty boats, it is said, belong to the island, and are almost constantly at work in this business. Vessels come from Kent to purchase the oysters, and they sell some to Wivenhoe, where what are called the Colchester beds are situated. They are sold by the tub of two bushels, and are generally from 4s. to 6s. a tub; but at present (1807) 6s. A dredging-boat is from fourteen to thirty or forty tons burden: all are decked and built at Wivenhoe, Brightlingsea, and places thereabouts. The price is £10 a ton for the hull of the vessel only; the fitting out of one of twenty tons requiring the amount of £150. From two to four men are required for each vessel, who are paid by shares; and the master has a share for the vessel. In the spring season they go to dredge on the coasts of Hants and Dorset. Sometimes 130 vessels have been counted at work within sight of Mersea. This oyster-fishery is, it is said, an object of considerable consequence to the country, from the earnings being great, and some other circumstances: but when the men die, their families, it is said, come to the parish, greatly increased by the number of apprentices which they have taken. Nothing, however, the writer of the report thinks, can be so preposterous as a police of the poor, which permits the benefits of commerce and manufactures to load the land with rates to the amount of 8s. in the pound, when a very small contribution by a box-club, or benefit society, would readily prevent the evil.

The following account of the oyster-business in the same district is from Mr. Bennet Hawes of Mersea, given as from his own local knowledge of the places where it is carried on, in the above report. The number of vessels which are employed in it, of from eight to forty or fifty tons, is nearly 200, in which are employed from 400 to 500 men and boys. A vessel carrying three men has one share and a half of all the earnings, and the men one share each. Large vessels have generally, it is said, two shares; but none, it is believed, more than this. It is said that the vessels which are built at East Donyland, Wivenhoe, Brightlingsea, Burnham, and Mersea, for this business, will last from thirty to forty years, when proper care is taken of them. The writer was informed by a person then living at Wivenhoe, that he had, within the last twenty years, built 100 vessels for the oyster business alone. There has been an increase of boats, and of course of men, of more than one half within the last thirty years.

At Burnham they have seven dredging smacks, belonging to the company that hire the river of Sir Henry Miklmay, besides four other private ones and some smaller vessels. The smacks are from eighteen to twenty tons. And there are only about 100 fishermen and sailors about the place, which are much too few, it is thought, for so fine a river. Most of the vessels of sixteen tons and upwards go, it is said, to Portsmouth, or places adjacent, in the month of March, to catch and carry oysters; those under twenty-

five tons being employed in catching them, and the larger ones in carrying them into this county and Kent, to be used as noticed above; they generally return thence in the month of June, when the large ones go after mackerel, herrings, and sprats, during the latter part of the summer, and, in the ensuing winter, the smaller ones to the catching of oysters in the breeding rivers, as above. The oysters are sold to London, Hamburg, Bremen, and, in time of peace, to Holland, France, and Flanders. The quantity consumed in a season is scarcely to be calculated; but it is supposed that it cannot be less than 12,000 or 15,000 bushels. This fishery is so much blended with the others, that it is almost impossible to state the capital which is employed in it, but it is supposed to be from £60,000 to £80,000.

**SPAY**, *v.a.* Lat, *spado*. To castrate female animals.

Be dumb, you beggars of the rythming trade;  
Geld your loose wits, and let your mouse be spayed.  
*Cleaveland.*

The males must be geld, and the sows spayed; the spayed they esteem as the most profitable, because of the great quantity of fat upon the inwards.

*Mortimer's Husbandry.*

**SPAYING**, or **SPADING**, in rural economy, the operation of castrating the females of several kinds of animals, as sows, &c., to prevent any further conception, and promote their fattening. It is performed by cutting them in the mid-flank, on the left side, with a sharp knife or lancet, in order to extirpate or cut off the parts destined to conception, and then stitching up the wound, anointing the part with tar-salve, and keeping the animal warm for two or three days. The general way is to make the incision in a sloping manner, two inches and a half long, that the forefinger may be put in towards the back, to feel for the ovaries, which are two kernels as big as acorns, one on each side of the uterus, one of which being drawn to the wound, the cord or string is cut, and thus both taken out.

In the Annals of Agriculture Mr. Foot has suggested the practice of spaying old cows and heifers; as it is a method, he apprehends, that might be performed with safety, and prove of general use in grazing; as cows, when they grow old and fail in their milk, are often attended with difficulty, where the bull goes at large, to keep them from him, especially on commons, during the summer, which put him on trying the experiment on a cow of small value, whose profit for the pail was so far over that she would not milk for about three months before she became dry. After she had calved about a month, he had her cut; the operator was an ingenious person, and performed the business well, that with a little care of keeping her from the cold (being early in the spring) for about a fortnight he thought her out of danger; and continued milking her as usual all the time. She soon began to thrive, gaining flesh, and before the summer was over, by the time she was quite dry, was much improved, though kept no better than the other part of the dairy on very middling pasture. At Michaelmas, had she been put to turpines, or good rouen, she would have been fat by

Christmas, or soon after. When killed, she sold at 3*s.* 6*d.* a stone, about half fat at that time, which he laid at 1*s.* a stone more than she would have done had she not been cut. And afterwards he had two others cut, that continued to be milked, and grazed well; one he had killed, the other he sold alive, which improved and paid beyond expectation. And, though little has yet been done in this way, he is persuaded it will be found of general utility if attended to. But, however, lately he accidentally met the person that performed the operation, who informed him that he had been sent for within twelve months, or thereabouts, to cut nearly forty in like manner, which having all done well, none failed; that there appears little or no danger in the case; and he believes it may be found of great advantage to the grazier and farmer, if they are inclined to practise it, as well as to the public at large. In confirmation of the above, the persons who have tried the experiment are, he is informed, William Colhoun, esq., Norfolk, who has cut eight; Mr. Martin, Exning, Suffolk, who has cut six; Mr. Cayson, Chippenham, who has had the operation performed on twenty; and Mr. Robinson, Eriswell, who has performed it on four or six. We may further add that most of these were young heifers between two and three years old (some old cows), that had not taken bull; the young stock appears to thrive apace, and grow in size, as well as to be likely to answer for the butcher soon; they may be fattened with turnips in the winter, or kept on another summer as the grazier pleases. And in Yorkshire it is very common to fatten their heifers at three years old, which answer as great a purpose for grazing, and are more profitable than older steers or heifers, &c., but those are kept from the bull.

**SPEAK,** *v. n. & r. a.* { Sax. *spean*, *spnean*; Gothic *spuca*; **SPEAKABLE,** *adj.* { can; Gothic *spuca*; **SPEAKER,** *n.s.* { Teut. *sprechian*. To utter articulate sounds; discourse; harangue; make mention; give sound: to pronounce; address; proclaim: speakable is possible to be spoken; having the power of speech: speaker, he who speaks or celebrates.

Thei idel lernen to go abouthe housis, not only idil but ful of wordis and curios spekyng thingis that bihoueth not. *Wicif. 1 Tim. 5.*

Lot went out, and spoke unto his sons-in-law. *Gen. xix. 14.*

Consider of it, take advice, and speak your minds. *Judges.*

Hannah spoke in her heart, only her lips moved, but her voice was not heard. *1 Sam. i. 13.*

They sat down with him upon the ground, and none spoke a word. *Job ii. 13.*

When divers were hardened, and believed not, but spoke evil of that way before the multitude, he departed. *Acts xix. 9.*

You from my youth  
Have known and tried me, speak I more than truth? *Sandys.*

Nicholas was by a herald sent for to come into the great bassa; Solyman disdaining to speak with him himself. *Knotles.*

A knave should have some countenance at his friend's request. An honest man, Sir, is able to speak for himself, when a knave is not. *Shakespeare. Henry IV.*

When he had no power,  
He was your enemy; still spake against  
Your liberties and charters. *Id. Coriolanus.*

Were such things here as we do speak about?  
Or have we eaten of the insane root,  
That takes the reason prisoner? *Id. King Lear.*

Make all your trumpets speak, give them all  
breath,  
Those clam'rous harbingers of blood and death. *Shakespeare.*

Thou canst not fear us, Pompey, with thy sails,  
We'll speak with thee at sea. *Id. Antony and Cleopatra.*

After my death, I wish no other herald,  
No other speaker of my living actions,  
To keep mine honour from corruption. *Shakspeare.*

It is my father's musick  
To speak your deeds, not little of his care  
To have them recompensed. *Id. Winter's Tale.*

These fames grew so general, as the authors were lost in the generality of speakers. *Bacon's Henry VII*

The fire you speak of,  
If any flames of it approach my fortunes,  
I'll quench it not with water, but with ruin. *Ben Jonson.*

The Scripture speaks only of those to whom it speaks. *Hammond.*

Many of the nobility made themselves popular by speaking in parliament against those things which were most grateful to his majesty, and which still passed, notwithstanding their contradiction. *Clarendon.*

So spake the archangel Michael, then paused. *Milton.*

Let heaven's wide circuit speak  
The Maker's high magnificence. *Id.*

Say,  
How cam'st thou speakable of mute? *Id.*

What you keep by you, you may change and mend. *Waller.*

But words once spoke can never be recalled. *Tillotson.*

They could never be lost but by an universal deluge, which has been spoken to already. *Dryden.*

Speaking is nothing else than a sensible expression of the notions of the mind, by several discriminations of utterance of voice, used as signs, having by consent several determinate significancies. *Holder.*

Thersites, though the most presumptuous Greek, Yet durst not for Achilles' armour speak. *Dryden.*

I have disabled myself, like an elected speaker of the house. *J. Lock.*

That with one blast through the whole house does bound, *Atterbury.*

And first taught speaking trumpet how to sound. *Id.*

He no where speaks it out, or in direct terms calls them substances. *Locke.*

Colours speak all languages, but words are understood only by such a people or nation. *Spectator.*

Lucan speaks of a part of Caesar's army, that came to him from the Leman-lake, in the beginning of the civil war. *Addison.*

Horace's phrase is, ' torret jecur,'  
And happy was that curious speaker. *Prior.*

Had Luther spoke up to this accusation, yet Chrysostom's example would have been his defence. *Attterbury.*

Common speakers have only one set of ideas, and one set of words to clothe them in; and these are always ready at the mouth. *Swift.*

In conversation or reading, find out the true sense or idea which the speaker or writer affixes to his words. *Watts's Logick.*

To me they speak of brighter days—  
But lull the chords; for now, alas! *Shakespeare.*

I must not think, I may not gaze  
On what I am—on what I was. *Byron*

**SPEAKER OF THE HOUSE OF COMMONS**, a member of the house elected by a majority of votes thereof to act as chairman or president in putting questions, reading briefs or bills, keeping order, reprimanding the refractory, adjourning the house, &c. See PARLIAMENT.

**SPEAKING TRUMPET**. See TRUMPET.

**SPEAN**. See SPAN.

**SPEAR**, *n.s. v.a.*, & *v.n.* Saxon *spene*; Gothic *spior*;

**SPEAR-GRASS**, *n.s.* Belg. *sperre*; old Fr. *spare*; low Lat. *sparus*; Welsh *ys-per*.

A long thrusting weapon; a lance: to pierce with a spear; to shoot or sprout: spear-grass is long, stiff grass: spearman, the man who uses a spear.

Tickle our noses with *speargrass* to make them bleed; and then beslubber our garments with it.

*Shakspeare. Henry IV.*

Those brandishers of *spears*,  
From many cities drawn, are they that are our hind-  
erers. *Chapman.*

The borderers watching, until they be past up into some narrow creek, below them cast a strong corded net athwart the stream, with which, and their loud shouting, they stop them from retiring, until the ebb have abandoned them to the hunter's mercy, who, by an old custom, shares them with such indifference, as, if a woman with child be present, the babe in her womb is gratified with a portion; a point also observed by the *spear* hunters in taking of salmon.

*Carew.*

The Egyptian like a hill himself did rear;  
Like some tall tree upon it seemed his *spear*. *Couley.*

Their heads as low

Bowed down in battle, sunk before the *spears*,  
Of despotic foes. *Milton.*

Let them not lie lest they should *spear*, and the air dry and spoil the shoot. *Mortimer's Husbandry.*

The *spearman's* arm, by thee, great God, directed,  
Sends forth a certain wound. *Prior.*

The flying *spear*

Sung innocent, and spent its force in air. *Pepe.*

The roused up lion, resolute and slow,  
Advances full on the pretended *spear*. *Thomson.*

**SPEAR**. See LANCE.

**SPEAR-GRASS**. See ASPARAGUS.

**SPEAR-WORT** is a species of ranunculus.

**SPECCHIA**, an ancient name of Cyprus.

**SPECIA**, an island in the Grecian Archipe-  
lago. Long.  $41^{\circ} 12'$  E. Ferro, lat.  $37^{\circ} 11'$  N.

**SPECIA**. See SPEZZA.

**SPECIAL**, *adj.*

**SPECIALITY**, *adv.*

**SPECIALTY**, *or*

**SPECIALITY**, *n.s.*

**SPECIES**,

**SPECIE**, *adj.* & *n.s.*

**SPECIFICAL**, *adj.*

**SPECIFICALLY**, *adv.*

**SPECIFICATE**, *v.a.*

**SPECIFICATION**, *n.s.*

**SPECIALLY**, *v.a.*

A particular kind or thing: hence a representation to the mind; show; circulating medium: specific and specific mean constituting a species: specific is also an appropriate medicine; an occult medicine: the adverb agrees with the adjective:

to specificate is to mark by noting the distinguishing peculiarities: the noun substantive corresponding: to specify, to mention; note particularly.

*Specially* the day that thou stodest before the Lord. *Deut.*

A brother beloved, *specially* to me. *Phil. xvi.*

Most commonly with a certain *special* grace of her own, wagging her lips, and grinning instead of smiling. *Sidney.*

The several books of scripture having had each some several occasion and particular purpose which caused them to be written, the contents thereof are according to the exigence of that *special* end whereunto they are intended. *Id.*

On these two general heads all other *specialities* are dependent. *Id.*

As the change of such laws as have been *specified* is necessary, so the evidence that they are such must be great. *Hooker.*

Nought so vile that on the earth doth live,  
But to the earth some *special* good doth give. *Shakspeare.*

The king hath drawn  
The *special* head of all the land together. *Id. Henry IV.*

The packet is not come  
Where that and other *specialties* are bound. *Shakspeare.*

An apparent diversity between the *species* visible and audible is, that the visible doth not mingle in the medium, but the audible doth. *Bacon.*

Shews and *species* serve best with the people. *Id.*

The operation of purging medicines has been referred to a hidden propensity, a *specifical* virtue, and the like shifts of ignorance. *Id. Natural History.*

O'Neal, upon his marriage with a daughter of Kildare, was made denizen by a *special* act of parliament. *Davies.*

The fourth commandment, in respect of any one definite and *special* day of every week, was not *sineply* and perpetually moral. *Whitæ.*

The other schème takes *special* care to attribute alia the work of conversion to grace. *Hammond.*

The Phenix Pindar is a whole *species* alone. *Couley.*

That thou to truth the perfect way may'st know,  
To thee all her *specifick* forms I'll show. *Denham.*

Such things are evident by natural light, which men of a mature age, in the ordinary use of their faculties, with the common help of mutual society, may know and be sufficiently assured of without the help of any *special* revelation. *Wilkins.*

If there be matter of law that carries any difficulty, the jury may, to deliver themselves from an attaint, find it *special*. *Hale.*

Truth is the *special* ornament of our mind, decking it with a graceful and pleasant lustre. *Barrow.*

When men were sure that, in case they rested upon a bare contract without *speciality*, the other party might wage his law, they would not rest upon such contracts without reducing the debt into a *speciality*, which accorded many suits. *Hale.*

Man, by the instituted law of his creation, and the common influence of the divine goodness, is enabled to act as a reasonable creature, without any particular, *specifying*, concurrent, new imperate act of the divine *special* providence. *Id.*

He bore  
A paunch of the same bulk before ;  
Which still he had a *special* care  
To keep well crammed with thrifty fare. *Hudibras.*

For we are animals no less,  
Although of different *species*. *Id.*

By whose direction is the nutriment so regularly distributed into the respective parts, and how are they kept to their *specific* uniformities? *Glanville.*

He intendeth the care of *species* or common natures, but letteth loose the guard of individuals or single existencies. *Browne.*

Thou nam'st a race which must proceed from me, Yet my whole *species* in myself I see. *Dryden.*

It is a most certain rule, how much any body hath of colour, so much hath it of opacity, and by so much the more unfit it is to transmit the *species*. *Ray on the Creation.*

Human reason doth not only gradually, but *specifically*, differ from the fantastick reason of brutes, which have no conceit of truth, as an aggregate of divers simple conceits, nor of any other universal. *Grew.*

As all things were formed according to these *specifical* platforms, so their truth must be measured from their conformity to them. *Norris.*

Though our charity should be universal, yet, as it cannot be actually exercised but on particular times, so it should be chiefly on *special* opportunities. *Sprat's Sermons.*

St. Peter doth not *specify* what these waters were. *Burnet.*

The understanding, as to the exercise of this power, is subject to the command of the will, though, as to the *specifick* nature of its acts, it is determined by the object. *South.*

His faith must be not only living, but lively too; it must be put into a posture by a particular exercise of those several virtues that are *specifically* requisite to a due performance of this duty. *Id. Sermons.*

Milton's subject was still greater than Homer's or Virgil's; it does not determine the fate of single persons or nations, but of a whole *species*. *Addison.*

The constitution here speaks generally, without the *specification* of any place. *Ayliffe's Parergon.*

*Specific* gravity is the appropriate and peculiar gravity or weight which any species of natural bodies have, and by which they are plainly distinguishable from all other bodies of different kinds. *Quincy.*

The *species* of the letters illuminated with blue, were nearer to the lens than those illuminated with deep red, by about three inches, or three and a quarter; but the *species* of the letters illuminated with indigo and violet appeared so confused and indistinct, that I could not read them. *Newton's Opticks.*

These principles I consider not as occult qualities, supposed to result from the *specifick* forms of things, but as general laws of nature, by which the things themselves are formed; their truth appearing to us by phenomena, though their causes be not yet discovered. *Id.*

He cannot but confess that it is a thing the most desirable to man, and most agreeable to the goodness of God, that he should send forth his light and his truth by a *special* revelation of his will. *Rogers.*

Our Saviour is represented every where in scripture as the *special* patron of the poor and the afflicted, and as laying their interest to heart more nearly than those of any other of his members. *Atterbury.*

As there was in the splendour of the Roman empire, a less quantity of current *species* in Europe than there is now, Rome possessed a much greater proportion of the circulating *species* of its time than any European city. *Arbuthnot.*

The *specifick* qualities of plants reside in their native spirit, oil, and essential salt: for the water, fixt salt, and earth, appear to be the same in all plants. *Id.*

A mind of superior or meaner capacities than human, would constitute a different *species*, though

united to a human body in the same laws of connexion: and a mind of human capacities would make another *species*, if united to a different body in different laws of connexion. *Bentley's Sermons.*

He must allow that bodies were endowed with the same affections then as ever since; and that, if an axe-head be supposed to float upon water, which is *specifically* lighter, it had been supernatural. *Bentley.*

If she would drink a good decoction of sarsa, with the usual *specificks*, she might enjoy a good health. *Wise man.*

A *special* idea is called by the schools a *species*. *Watts.*

*Specifick* difference is that primary attribute which distinguishes each *species* from one another, while they stand ranked under the same general nature or genus. Though wine differs from other liquids, in that it is the juice of a certain fruit, yet this is but a general or generick difference? for it does not distinguish wine from cyder or perry: the *specifick* difference of wine therefore is its pressure from the grape; as cyder is pressed from apples, and perry from pears. *Id.*

This *specification* or limitation of the question hinders the disputers from wandering away from the precise point of enquiry. *Id.*

He has there given us an exact geography of Greece, where the countries, and the uses of their soils are *specified*. *Pope.*

**SPECIALTY**, *specialitas*, in English law, a bond, bill, or such like instrument: a writing or deed, under the hand and seal of the parties.—Littleton. These are looked upon as the next class of debts after those of record; being confirmed by special evidence under seal. 2 Comm. c. 30, p. 465.

**SPECIES**, in algebra, are the letters, symbols, marks, or characters, which represent the quantities in any operation or equation.

**SPECIES**, in commerce, the several pieces of gold, silver, copper, &c., which, having passed their full preparation and coinage, are current in public. See **MONEY**.

**SPECIES**, in logic, a relative term, expressing an idea which is comprised under some general one called a *genus*. See **LOGIC**.

**SPECIES**, in optics, the image painted on the retina by the rays of light reflected from the several points of the surface of an object, received in by the pupil, and collected in their passage through the crystalline, &c.

**SPECIFIC**, in philosophy, that which is peculiar to any thing, and distinguishes it from all others.

**SPECIFIC DIFFERENCES OF PLANTS**. See **BOTANY**, *Index*.

**SPECIFIC GRAVITY** is a term much employed in the discussions of modern physics. It expresses the weight of any particular kind of matter, as compared with the weight of the same bulk of some other body of which the weight is supposed to be familiarly known, and is therefore taken for the standard of comparison. The body generally made use of for this purpose is pure water. See **HYDROSTATICS**.

The specific gravity of bodies is a very interesting question both to the philosopher and to the man of business. The philosopher considers the weights of bodies as measures of the number of material atoms, or the quantity of matte-

which they contain. This he does on the supposition that every atom of matter is of the same weight, whatever may be its sensible form. This supposition, however, is made by him with caution, and he has recourse to specific gravity for ascertaining its truth in various ways. The man of business entertains no doubt of the matter, and proceeds on it as a sure guide in his most interesting transactions. We measure commodities of various kinds by tons, pounds, and ounces in the same manner as we measure them by yards, feet, and inches, or by bushels, gallons, and pints; nay, we do this with much greater confidence, and prefer this measurement to all others whenever we are much interested to know the exact proportions of matter that bodies contain. The weight of a quantity of grain is allowed to inform us much more exactly of its real quantity of useful matter than the most accurate measure of its bulk. We see many circumstances which can vary the bulk of a quantity of matter, and these are frequently such as we cannot regulate or prevent; but we know very few that can make any sensible change in this weight without the addition or abstraction of other matter. Even taking it to the summit of a high mountain, or from the equator to the polar region, will make no change in its weight as it is ascertained by the balance, because there is the same real diminution of weight in the pounds and ounces used in the examination. Notwithstanding the unavoidable change which heat and cold make in the bulk of bodies, and the permanent varieties of the same kind of matter which are caused by different circumstances of growth, texture, &c., most kinds of matter have a certain consistency in the density of their particles, and therefore in the weight of a given bulk. Thus the purity of gold, and its degree of adulteration, may be inferred from its weight, it being purer in proportion as it is more dense. The density, therefore, of different kinds of tangible matter becomes characteristic of the kind, and a test of its purity; it marks a particular appearance in which matter exists, and may therefore be called, with propriety, specific. But this density cannot be directly observed. It is not by comparing the distances between the atoms of matter in gold and in water that we say the first is nineteen times denser than the last, and that an inch of gold contains nineteen times as many material atoms as an inch of water; we reckon on the equal gravitation of every atom of matter, whether of gold or of water; therefore the weight of any body becomes the indication of its material density, and the weight of a given bulk becomes specific of that kind of matter, marking its kind, and even ascertaining its purity in this form. To make this comparison of general use, the standard must be familiarly known, and must be very uniform in its density, and the comparison of bulk and density must be easy and accurate. The most obvious method would be to form, with all nicety, a piece of the standard matter of some convenient bulk, and to weigh it very exactly, and keep a note of its weight: then, to make the comparison of any other substance, it must be made into a mass of the same precise bulk, and weighed with equal care; and the most convenient way of expressing the specific gravity would be to consider the

weight of the standard as unity, and then the number expressing the specific gravity is the number of times that the weight of the standard is contained in that of the other substance. This comparison is most easily and accurately made in fluids. We have only to make a vessel of known dimensions equal to that of the standard which we employ, and to weigh it when empty, and then when filled with the fluid. Nay, the most difficult part of the process, the making a vessel of the precise dimensions of the standard, may be avoided, by using some fluid substance for a standard. Any vessel will then do; and we may ensure very great accuracy by using a vessel with a slender neck, such as a phial or matrass; for, when this is filled to a certain mark in the neck, any error in the estimation by the eye will bear a very small proportion to the whole. The weight of the standard fluid, which fills it to this mark being carefully ascertained, is kept in remembrance. The specific gravity of any other fluid is had by weighing the contents of this vessel when filled with it, and dividing the weight by the weight of the standard. The quotient is the specific gravity of the fluid. But in all other cases this is a very difficult problem: it requires very nice hands, and an accurate eye, to make two bodies of the same bulk. An error of  $\frac{1}{100}$ th part in the linear dimensions of a solid body makes an error of one-thirtieth part in its bulk; and bodies of irregular shapes and friable substance, such as the ores of metals, cannot be brought into convenient and exact dimensions for measurement. From all these inconveniences and difficulties we are freed by the celebrated Archimedes, who, from the principles of hydrostatics discovered or established by him, deduced the accurate and easy method which is now universally practised for discovering the specific gravity and density of bodies. See ARCHIMEDES. Instead of measuring the bulk of the body by that of the displaced fluid (which would have been impossible for Archimedes to do with any thing like the necessary precision), we have only to observe the loss of weight sustained by the solid. This can be done with great ease and exactness. Whatever may be the bulk of the body, this loss of weight is the weight of an equal bulk of the fluid; and we obtain the specific gravity of the body by simply dividing its whole weight by the weight lost: the quotient is the specific gravity when this fluid is taken for the standard, even though we should not know the absolute weight of any given bulk of this standard. It also gives us an easy and accurate method of ascertaining even this fundamental point. We have only to form any solid body into an exact cube, sphere, or prism, or known dimensions, and observe what weight it loses when immersed in this standard fluid. This is the weight of the same bulk of the standard to be kept in remembrance; and thus we obtain, by the by, a most easy and accurate method for measuring the bulk or solid contents of any body, however irregular its shape may be. We have only to see how much weight it loses in the standard fluid; we can compute what quantity of the standard fluid will have this weight. Thus should we find that a quantity of sand, or a furze bush, loses 250 ozs.,

when immersed in pure water, we learn by this that the solid measure of every grain of the sand, or of every twig and prickle of the furze, when added into one sum, amounts to the fourth part of a cubic foot, or to 432 cubic inches.

To all these advantages of the Archimedean method of ascertaining the specific gravity of bodies, derived from his hydrostistical doctrines and discoveries, we may add, that the immediate standard of comparison, namely, water, is, of all the substances that we know, the fittest for the purpose of a universal standard of reference. In its ordinary natural state it is sufficiently constant and uniform in its weight for every examination where the utmost mathematical accuracy is not wanted; all its variations arise from impurities, from which it may at all times be separated by the simple process of distillation: and we have every reason to think that, when pure, its density, when of the same temperature, is invariable. Water is therefore universally taken for the unit of that scale on which we measure the specific gravity of bodies, and its weight is called 1. The specific gravity of any other body is the real weight in pounds and ounces, when of the bulk of one pound or one ounce of water. It is, therefore, of the first importance, in all discussions respecting the specific gravity of bodies, to have the precise weight of some known bulk of pure water. For this purpose we shall reduce all to the English cubic foot and avoirdupois ounce of the exchequer standard, on account of a very convenient circumstance peculiar to this unit, viz. that a cubic foot contains almost precisely 1000 ozs. of pure water, so that the specific gravity of bodies expresses the number of such ounces contained in a cubic foot. We begin with a trial made before the house of commons in 1696 by Mr. Everard. He weighed 2145·6 cubic inches of water by a balance, which turned sensibly with six grains, when there were thirty pounds in each scale. The weights employed were the troy weights, in the deposit of the court of exchequer, which are still preserved, and have been most scrupulously examined and compared with each other. The weight was 1131 ozs. fourteen pennyweights. This wants just eleven grains of 1000 avoirdupois ounces for 1728 cubic inches, or a cubic foot; and it would have amounted to that weight had it been a degree or two colder. The temperature indeed is not mentioned; but, as the trial was made in a comfortable room, we may presume the temperature to have been about 55° of Fahrenheit's thermometer. The dimensions of the vessel were as accurate as the nice hand of Mr. Abraham Sharp, Mr. Flamsteed's assistant at Greenwich, could execute, and it was made by the exchequer standard of length. This is confided in by the naturalists of Europe, as a very accurate standard experiment, and is confirmed by many others, both private and public. The standards of weight and capacity employed in the experiment are still in existence, and publicly known, by the report of the Royal Society to parliament in 1742, and by the report of a committee of the house of commons in 1758. This gives it a superiority over all the measures which have come to our knowledge.

The first experiment, made with proper atten-

tion, that we meet with is by the celebrated Snellius about 1615, and related in his Eratosthenes Batavus. He weighed a Rhinland cubic foot of distilled water, and found it 62·79 Amsterdam pounds. If this was the ordinary weight of the shops, containing 7626 English troy grains, the English cubic foot must be sixty-two pounds nine ounces, only one ounce more than by Everard's experiment. If it was the mint pound the weight was sixty-two pounds six ounces. The only other trials which can come into competition with Mr. Everard's are some made by the Academy of Sciences at Paris. Picart, in 1691, found the Paris cubic foot of the water of the fountain d'Arcueil to weigh 69·588 lbs. poids de Paris. Du Hamel obtained the very same result; but Mr. Monge, in 1783, says that filtered rain-water of the temperature of 12° (Reaumur) weighs 69·3792. Both these measures are considerably below, Mr. Everard's, which is 62·5; the former giving 62·053, and the latter 61·868. M. Lavoisier states the Paris cubic foot at seventy pounds, which makes the English foot 62·47. But there is an inconsistency among them which makes the comparison impossible. Some changes were made in 1688, by royal authority, in the national standards both of weight and length; and the academicians are exceedingly puzzled to this day in reconciling the differences, and cannot even ascertain with perfect assurance the lineal measures which were employed in their most boasted geodetical operations. Such variations in the measurements made by persons of reputation for judgment and accuracy engaged the writer of this article some years ago to attempt another. A vessel was made of a cylindrical form, as being more easily executed with accuracy, whose height and diameter were six inches, taken from a most accurate copy of the exchequer standard. It was weighed in distilled water of the temperature of 55° several times without varying two grains, and it lost 42895 grains. This gives for the cubic foot 998·74 ounces, deficient from Mr. Everard's an ounce and a quarter; a difference which may be expected, since Mr. Everard used the New River water without distillation. These observations cannot be thought superfluous in a matter of such continual reference in the most interesting questions both to the philosopher and the man of business. Let us, therefore, take water for the standard, and suppose that, when of the ordinary temperature of summer and in its state of greatest natural purity, viz. in clean rain or snow, an English cubic foot of it weighs 1000 ounces avoirdupois, of 437·5 troy grains each. Divide the weight of any body by the weight of an equal bulk of water; the quotient is the specific gravity of that body; and, if the three first figures of the decimal be accounted integers, the quotient is the number of avoirdupois ounces in a cubic foot of the body. Thus the specific gravity of the very finest gold which the refiner can produce is 19·365, and a cubic foot of it weighs 19,365 ounces. But an important remark must be made here. All bodies of homogeneous or unorganised texture expand by heat and contract by cooling. The expansion and contraction by the same change of temperature is very different

## SPECIFIC GRAVITY.

in different bodies. Thus water, when heated from  $60^{\circ}$  to  $100^{\circ}$ , increases its volume nearly  $\frac{1}{17}$  of its bulk, and mercury only  $\frac{1}{13}$ , and many substances much less. Hence it follows that an experiment determines the specific gravity only in that very temperature in which the bodies are examined. It will therefore be proper always to note this temperature; and it will be convenient to adopt some very useful temperature for such trials in general; perhaps about  $60^{\circ}$  of Fahrenheit's thermometer is as convenient as any. It may always be procured in these climates without inconvenience. A temperature near to freezing would have some advantages, because water changes its bulk very little between the temperature  $32^{\circ}$  and  $45^{\circ}$ . But this temperature cannot always be obtained. It will much conduce to the facility of the comparison to know the variation which heat produces on pure water. The following table, taken from the observations of Dr. Blagen and Mr. Gilpin (Phil. Trans. 1792), will answer this purpose:—

Temperature of Water.	Bulk of Water.	Specific Gravity.
30		
35	99910	1·00090
40	99070	1·00094
45	99914	1·00086
50	99932	1·00068
55	99962	1·00058
60	100000	1·00000
65	100050	0·99950
70	100106	0·99894
75	100171	0·99830
80	100242	0·99759
85	100320	0·99681
90	100404	0·99598
95	100501	0·99502
100	100602	0·99402

These gentlemen observed the expansion of water to be very anomalous between  $32^{\circ}$  and  $45^{\circ}$ . This is distinctly seen during the gradual cooling of water to the point of freezing. It contracts for a while and then suddenly expands. But we seldom have occasion to measure specific gravities in such temperature.

In examining either solids or fluids we must be careful to free their surface, or that of the vessel in which the fluid is to be weighed, from air, which frequently adheres to it in a peculiar manner, and, by forming a bubble, increases the apparent bulk of the solid, or diminishes the capacity of the vessel. The greatest part of what appears on those occasions seems to have existed in the fluid in a state of chemical union, and to be set at liberty by the superior attraction of the fluid for the contiguous solid body. These air bubbles must be carefully brushed off by hand. All greasy matters must be cleared off for the same reason; they prevent the fluid from coming into contact. We must be no less careful that no water is imbibed by the solid, which would increase its weight without increasing its bulk. In some cases, however, a very long maceration and imbibition is necessary. Thus, in examining the specific gravity of the fibrous part of vegeta-

bles, we should err exceedingly if we imagined it as small as it appears at first. We believe that in most plants it is at least as great as water, for after long maceration they sink in it.

The nicest and most sensible balances are necessary for this examination. Balances are even constructed on purpose, and fitted with several pieces of apparatus which make the examination easy and neat. We have described (see BALANCE) the most convenient. Mr. Gravesande's contrivance for observing the fractions of a grain is extremely ingenious and expeditious, especially for detecting the effect of viscosity. The hydrometer, or aræometer, is another instrument for ascertaining the specific gravity of fluids. This very pretty instrument is the invention of Hypatia, a lady of Alexandria, as eminent for intellectual accomplishments as she was admired for her beauty. She wrote commentaries on Appolonius and Diaphantus, and composed Astronomical Tables; all of which are lost. See HYPATIA. We have described some of the most approved of these instruments under the article HYDROMETER, and shall here make a few observations on the principles of their construction, not as they are usually made accommodated to the examination of particular liquors, but as indicators of pure specific gravity. And we must say that this would, for many reasons, be the best way of constructing them. The very ingenious contrivances for accommodating them to particular purposes are unavoidably attended with many sources of error, both in their adjustment by the maker and in their use; and all that is gained by a very expensive instrument is the saving the trouble of inspecting a table. A simple scale of specific gravity would expose to no error in construction, because all the weights but one, or all the points of the scale but one, are to be obtained by calculation, which is incomparably more exact than any manual operation, and the table can always be more exact than any complex observation. But a still greater advantage is that the instruments would thus be fitted for examining all liquors whatever, whereas at present they are almost useless for any but the one for which they are constructed.

Unless the hydrometer is of a considerable size, it can hardly be made so as to extend from the lightest to the heaviest fluid which we may have occasion to examine, even though we except mercury. Some of the mineral acids are considerably more than twice the weight of ether. When there is such a load at top, the hydrometer is very apt to overset, and inclines with the smallest want of equilibrium. Great size is inconvenient even to the philosopher, because it is not always in his power to operate on a quantity of fluid sufficient to float the instrument. Therefore two, or perhaps three, are necessary for general examination. One may reach from ether to water; another may serve for all liquors of a specific gravity between 1 and  $1\frac{1}{2}$ ; and the third, for the mineral acids, may reach from this to 2. If each of these be about two solid inches in capacity, we may easily and expeditiously determine the specific gravity within  $\frac{1}{1000}$ th part of the truth; and this is precision enough for most purposes of science or business. The chief

questions are, 1. To ascertain the specific gravity of an unknown fluid. This needs no farther explanation. 2. To ascertain the proportion of two fluids which are known to be in a mixture. This is done by discovering the specific gravity of the mixture by means of the hydrometer, and then deducing the proportion from a comparison of this with the specific gravities of the ingredients. In this mode of examination the bulk is always the same; for the hydrometer is immersed in the different fluids to the same depth. Now, if an inch, for example, of this bulk is made up of the heaviest fluid, there is an inch wanting of the lightest; and the change made in the weight of the mixture is the difference between the weight of an inch of the heaviest and of an inch of the lightest ingredients. The number of inches therefore of the heaviest fluid is proportional to the addition made to the weight of the mixture. Therefore let  $B$  and  $b$  be the bulks of the heaviest and lightest fluids in the bulk  $\beta$  of the mixture; and let  $D$ ,  $d$ , and  $\delta$  be the densities, or the weights, or the specific gravities (for they are in one ratio) of the heavy fluid, and the light fluid, and mixture (their bulk being that of the hydrometer). We have  $\beta = B + b$ . The addition which would have been made to the bulk  $\beta$ , if the lightest fluid were changed entirely for the heaviest, would be  $D - d$ ; and the change which is really made is  $\delta - d$ . —Therefore  $\beta : b = D - d : \delta - d$ . For similar reasons we should have  $\beta : B = D - d : D - \delta$ ; or, in words, 'the difference between the specific gravities of the two fluids, is to the difference between the specific gravities of the mixture and of the lightest fluid, as the bulk of the whole to the bulk of the heaviest contained in the mixture;' and 'the difference of the specific gravities of the two fluids, is to the difference of the specific gravities of the mixture and of the heaviest fluids, as the bulk of the whole to that of the lightest contained in the mixture.' This is the form in which the ordinary business of life requires the answer to be expressed, because we generally reckon the quantity of liquors by bulk, in gallons, pints, quarts. But it would have been equally easy to have obtained the answer in pounds and ounces; or it may be had from their bulks, since we know their specific gravities.

To avoid the inconveniences of a hydrometer with a very long and slender stem, or the necessity of having a series of them, a third sort has been contrived, in which the principle of both are combined. Suppose a hydrometer with a stem, whose bulk is one-tenth of that of the ball, and that it sinks in ether to the top of the stem; it is evident that in a fluid which is one-tenth heavier the whole stem will emerge; for the bulk of the displaced fluid is now one-tenth of the whole less, and the weight is the same as before, and therefore the specific gravity is one-tenth greater. Thus we have obtained a hydrometer which will indicate, by means of divisions marked on the stem, all specific gravities from 0·73 to 0·803; for 0·803 is one-tenth greater than 0·73. These divisions must be made in harmonic progressions, as before directed for an entire scale, placing 0·73 at the top of the stem and 0·803 at the bottom. When it floats at the

lowest division, a weight may be put on the top of the stem, which will again sink it to the top. This weight must evidently be 0·073, or one-tenth of the weight of the fluid displaced by the unloaded instrument. The hydrometer, thus loaded, indicates the same specific gravity, by the top of the stem, that the unloaded instrument indicates by the lowest division. Therefore, when loaded, it will indicate another series of specific gravities, from 0·803 to 0·833 ( $= 0\cdot803 + 0\cdot0803$ ), and will float in a liquor of the specific gravity 0·8833 with the whole stem above the surface. In like manner, if we take off this weight and put on 1  $= 0\cdot0803$ , it will sink the hydrometer to the top of the stem; and with this new weight it will indicate another series of specific gravities from 0·8833 to 0·97163 ( $= 0\cdot8833 + 0\cdot08633$ ). And, in the same manner, a third weight  $= 0\cdot8833$  will again sink it to the top of the stem, and fit it for another series of specific gravities up to 1·068793. And thus, with three weights, we have procured a hydrometer fitted for all liquors, from ether to a wort for a malt liquor of two barrels per quarter. Another weight, in the same progression, will extend the instrument to the strongest wort that is brewed. This is a very commodious form of the instrument, and is now in very general use for examining spirituous liquors, worts, ales, brines, and many such articles of commerce. But the divisions of the scale are generally adapted to the questions which naturally occur in the business. Thus, in the commerce of strong liquors, it is usual to estimate the article by the quantity of spirit of a certain strength which the liquor contains.—This we have been accustomed to call proof spirit, and it is such that a wine gallon weighs seven pounds twelve ounces; and it is by this strength that the excise duties are levied. Therefore the divisions on the scale, and the weights which connect the successive repetitions of the scale, are made to express at once the number of gallons, or parts of a gallon, of proof spirits contained in a gallon of the liquor. Such instruments save all trouble of calculation to the exciseman or dealer; but they limit the use of a very delicate and expensive instrument to a very narrow employment. It would be much better to adhere to the expression either of specific gravity or of bulk; and then a very small table, which could be comprised in the smallest case for the instrument, might render it applicable to every kind of fluid. The reader cannot but have observed that the successive weights, by which the short scale of the instrument is extended to a great range of specific gravities, do not increase by equal quantities. Each difference is the weight of the liquor displaced by the graduated stem of the instrument when it is sunk to the top of the scale. It is a determined aliquot part of the whole weight of the instrument so loaded (in our example it is always one-eleventh of it). It increases therefore in the same proportion with the preceding weight of the loaded instrument. In short, both the successive additions, and the whole weights of the loaded instrument, are quantities in geometrical progression; and in like manner the divisions on the scale, if they correspond to equal differences of specific gravity, must also be un-

equal. This is not sufficiently attended to by the makers; and they commit an error here which is very considerable when the whole range of the instrument is great; for the value of one division of the scale, when the largest weight is on, is as much greater than its value when the instrument is not loaded at all, as the full loaded instrument is heavier than the instrument unloaded. No manner whatever of dividing the scale will correspond to equal differences of specific gravity through the whole range with different weights; but, if the divisions are made to indicate equal proportions of gravity when the instrument is used without a weight, they will indicate equal proportions throughout. This is evident from what we have been just now saying; for the proportion of the specific gravities corresponding to any two immediately succeeding weights is always the same. The best way, therefore, of constructing the instrument, so that the same divisions of the scale may be accurate in all its successive repetitions with the different weights, is to make these divisions in geometrical progression. The corresponding specific gravities will also be in geometric proportion. These being all inserted in a table, we obtain them with no more trouble than by inspecting the scale which usually accompanies the hydrometer. This table is of the most easy construction; for, the ratio of the successive bulks and specific gravities being all equal, the differences of the logarithms are equal. This will be illustrated by applying it to the example already given of a hydrometer extending from 0.73 to 1.068793 with three weights. This gives four repetitions of the scale on the stem. Suppose this scale divided into ten parts, we have forty specific gravities. Let these be indicated by the numbers 0, 1, 2, 3, &c., to 40. The mark 0 is affixed to the top of the stem, and the divisions downwards are marked 1, 2, 3, &c., the lowest being 10. These divisions are easily determined. The stem, which we may suppose five inches long, was supposed to be one-tenth of the capacity of the ball. It may therefore be considered as the extremity of a rod of eleven times its length, or fifty-five inches; and we must find nine mean proportionals between fifty and fifty-five inches. Subtract each of these from fifty-five inches, and the remainders are the distances of the points of division from 0, the top of the scale. The smallest weight is marked 10, the next 20, and the third 30. If the instrument loaded with the weight 20 sinks in some liquor to the mark 7, it indicates the specific gravity 27, that is, the twenty-seventh of forty mean proportionals between 0.73 and 1.068793, or 0.944242. To obtain all these intermediate specific gravities, we have only to subtract 9.6633229, the logarithm of 0.73, from that of 1.068793, viz. 0.0288937, and take 0.0041393, the fortieth part of the difference. Multiply this by 1, 2, 3, &c., and add the logarithm of 0.73 to each of the products. The sums are the logarithms of the specific gravities required. These will be found to proceed so equably that they may be interpolated ten times by a simple table of proportional parts without the smallest sensible error. Therefore the stem may be divided

into 100 parts very sensible to the eye (each being nearly the twentieth of an inch), and 400 degrees of specific gravity obtained within the range, which is as near as we can examine this matter by any hydrometer. Thus the specific gravities corresponding to No. 26, 27, 28, 29, are as follow:—

	1st Diff.	2d Diff.
26	0.93529	895
27	0.94424	904
28	0.95328	913
29	0.96241	

Nay, the trouble of inspecting a table may be avoided, by forming on a scale the logarithms of the numbers between 7.300 and 1078.793, and placing along side of it a scale of the same length divided into 400 equal parts, numbered from 0 to 400. Then, looking for the mark shown by the hydrometer on this scale of equal parts, we see opposite to it the specific gravity. We have been thus particular in the illustration of this mode of construction, because it is really a beautiful and commodious instrument, which may be of great use both to the naturalist and to the man of business. A table may be comprised in twenty pages octavo, which will contain the specific gravities of every fluid which can interest either, and answer every question relative to their admixture, with as much precision as the observations can be made. We therefore recommend it to our readers, and we recommend the very example which we have given as one of the most convenient. The instrument need not exceed eight inches in length, and may be contained in a pocket case of two inches broad and as many deep, which will also contain the scale, a thermometer, and even the table for applying it to all fluids which have been examined.

There is another method of examining the specific gravities of fluids, first proposed by Dr. Wilson, late professor of astronomy in the university of Glasgow. This is by a series of small glass bubbles, differing equally, or according to some rule, from each other in specific gravity, and each marked with its proper number. When these are thrown into a fluid which is to be examined, all those which are heavier than the fluid will fall to the bottom. Then holding the vessel in the hand, or near a fire or candle, the fluid expands, and one of the floating bubbles begins to sink. Its specific gravity therefore was either equal to, or a little less than, that of the fluid; and the degree of the thermometer, when it began to sink, will inform us how much it was deficient, if we know the law of expansion of the liquor. Sets of these bubbles fitted for the examination of spirituous liquors, with a little treatise showing the manner of using them, and calculating by the thermometer, are made by Mr. Brown, an ingenious artist of Glasgow, and are often used by the dealers in spirits, being found both accurate and expeditious. Also, though a bubble or two should be broken, the strength of spirits may easily be had by means of the remainder, unless two or three in immediate succession be wanting; for a liquor which answers to No. 4 will sink No. 2 by having it a

few degrees, and therefore No. 3 may be spared. This is a great advantage in ordinary business. A nice hydrometer is not only an expensive instrument, but exceedingly delicate, being so very thin. If broken, or even bruised, it is useless, and can hardly be repaired except by the very maker. As the only question here is, to determine how many gallons of excise proof spirits are contained in a quantity of liquor, the artist has constructed this series of bubbles in the simplest manner possible, by previously making forty or fifty mixtures of spirits and water, and then adjusting the bubbles to these mixtures. In some sets the number on each bubble is the number of gallons of proof spirits contained in 100 gallons of the liquor. In other sets the number on each bubble expresses the gallons of water which will make a liquor of this strength, if added to fourteen gallons of alcohol. Thus, if a liquor answers to No. 4, then four gallons of water added to fourteen gallons of alcohol will make a liquor of this strength. The first is the best method; for we should be mistaken in supposing that eighteen gallons, which answer to No. 4, contain exactly fourteen gallons of alcohol: it contains more than fourteen. By examining the specific gravity of bodies, the philosopher has made some very curious discoveries. The most remarkable of these is the change which the density of bodies suffers by mixture. It is a most reasonable expectation that, when a cubic foot of one substance is mixed any how with a cubic foot of another, the bulk of the mixture will be two cubic feet; and that eighteen gallons of water joined to eighteen gallons of oil will fill a vessel of thirty-six gallons. Accordingly this was never doubted; and even Archimedes, the most scrupulous of mathematicians, proceeded on this supposition in the solution of his famous problem, the discovery of the proportion of silver and gold in a mixture of both. He does not even mention it as a postulate that may be granted him, so much did he conceive it to be an axiom. Yet a little reflexion seems sufficient to make it doubtful, and to require examination. A box filled with musket balls will receive a considerable quantity of small shot, and after this a considerable quantity of fine sand, and after this a considerable quantity of water. Something like this might happen in the admixture of bodies of porous texture. But such substances as metals, glass, and fluids, where no discontinuity of parts can be perceived, or was suspected, seem free from every chance of this kind of introspection. Lord Verulam, however, without being a naturalist or mathematician ex professo, inferred from the mobility of fluids that they consisted of discrete particles, which must have pores interposed, whatever be their figure. And, if we ascribe the different densities or other sensible qualities to difference in size or figure of those particles, it must frequently happen that the smaller particles will be lodged in the interstices between the larger, and thus contribute to the weight of the sensible mass without increasing its bulk. He therefore suspects that mixtures will be in general less bulky than the sum of their ingredients. Accordingly the examination of this question was one of the first employments of the Royal So-

society of London, and long before its institution had occupied the attention of the gentlemen who afterwards composed it. The register of the Society's early meetings contains many experiments on this subject, with mixtures of gold and silver, of other metals, and of various fluids, examined by the hydrostatical balance of Mr. Boyle. Dr. Hooke made a prodigious number, chiefly on articles of commerce, which were unfortunately lost in the fire of London. It was soon found, however, that lord Verulam's conjecture had been well founded, and that bodies changed their density very sensibly in many cases. In general it was found that bodies which had a strong chemical affinity increased in density, and that their admixture was accompanied with heat. By this discovery it is manifest that Archimedes had not solved the problem of detecting the quantity of silver mixed with the gold in king Hiero's crown, and that the physical solution of it requires experiments made on all the kinds of matter that are mixed together. We do not find that this has been done to this day, although we may affirm that there are few questions of more importance. It is a very curious fact in chemistry, and it would be most desirable to be able to reduce it to some general laws; for instance, to ascertain what is the proportion of two ingredients which produces the greatest change of density. This is important in the science of physics, because it gives us considerable information as to the mode of action of those natural powers or forces by which the particles of tangible matter are united. If this introspection, concentration, compenetration, or by whatever name it be called, were a mere reception of the particles of one substance into the interstices of those of another, it is evident that the greatest concentration would be observed when a small quantity of the recipiend is mixed with, or disseminated through, a great quantity of the other. It is thus that a small quantity of fine sand will be received into the interstices of a quantity of small shot, and will increase the weight of the bagfull without increasing its bulk. The case is nowise different when a piece of freestone has grown heavier by imbibing or absorbing a quantity of water. If more than a certain quantity of sand has been added to the small shot, it is no longer concealed. In like manner, various quantities of water may combine with a mass of clay, and increase its size and weight alike. All this is very conceivable, occasioning no difficulty. But this is not the case in any of the mixtures we are now considering. In all these the first additions of either of the two substances produce but an inconsiderable change of general density; and it is in general most remarkable, whether it be condensation or rarefaction, when the two ingredients are nearly of equal bulks. We can illustrate even this difference by reflecting on the imbibition of water by vegetable solids, such as timber. Some kinds of wood have their weight much more increased than their bulks; other kinds of wood are more enlarged in bulk than in weight. The like happens in grains. This is curious, and shows in the most unquestionable manner that the particles of bodies are not in contact, but are kept together by forces which

act at a distance; for this distance between the centres of the particles is most evidently susceptible of variation; and this variation is occasioned by the introduction of another substance, which, by acting on the particles by attraction or repulsion, diminishes or increases their mutual actions and makes new distances necessary for bringing all things again into equilibrium. We refer the curious reader to the ingenious theory of the abbé Boscovich for an excellent illustration of this subject.—Theor. Phil. Nat. § de Solutione Chemica.

*Specific gravity of Metals altered by mixture.*

—This question is no less important to the man of business. Till we know the condensation of those metals by mixture, we cannot tell the quantity of alloy in gold and silver by means of their specific gravity; nor can we tell the quantity of pure alcohol in any spirituous liquor, or that of the valuable salt in any solution of it. For want of this knowledge, the dealers in gold and silver are obliged to have recourse to the tedious and difficult test of the assay, which cannot be made in all places or by all men. It is therefore much to be wished that some persons would institute a series of experiments in the most interesting cases: for it must be observed that this change of density is not always a small matter; it is sometimes very considerable and paradoxical. A remarkable instance may be given of it in the mixture of brass and tin for bells, great guns, optical speculums, &c. The specific gravity of cast brass is nearly 8·006, and that of tin is nearly 7·363. If two parts of brass be mixed with one of tin, the specific gravity is 8·931; whereas, if each had retained its former bulk, the specific gravity would

$$\text{have been only } 7\cdot793 \left( = \frac{2 \times 8\cdot006 + 7\cdot363}{3} \right).$$

A mixture of equal parts should have the specific gravity 7·684; but it is 8·441. A mixture of two parts tin with one part brass, instead of being 7·577, is 8·027. In all these cases there is a great increase of specific gravity, and consequently a great condensation of parts or contraction of bulk. The first mixture of eight cubic inches of brass, for instance, with four cubic inches of tin, does not produce twelve cubic inches of bell-metal, but only ten and a half nearly, having shrunk one-fifth. It would appear that the distances of the brass particles are most affected, or perhaps it is the brass that receives the tin into its pores; for we find that the condensations in these mixtures are nearly proportional to the quantities of the brass in the mixtures. It is remarkable that this mixture with the lightest of all metals has made a composition more heavy and dense than brass can be made by any hammering. The most remark-

able instance occurs in mixing iron with platina. If ten cubic inches of iron are mixed with one and a quarter of platina, the bulk of the compound is only nine inches and three-quarters. The iron therefore has not simply received the platina into its pores: its own particles are brought nearer together. There are similar results in the solution of turbith mineral, and of some other salts, in water. The water, instead of rising in the neck of the vessel, when a small quantity of the salt has been added to it, sinks considerably, and the two ingredients occupy less room than the water did alone.

The same thing happens in the mixture of water with other fluids, and different fluids with each other:—But we are not able to trace any general rule that is observed with absolute precision. In most cases of fluids the greatest condensation happens when the bulks of the ingredients are nearly equal. Thus, in the mixture of alcohol and water, we have the greatest condensation when sixteen ounces and a half of alcohol are mixed with twenty ounces of water, and the condensation is about one-thirty-sixth of the whole bulk of the ingredients. It is extremely various in different substances, and no classification of them can be made in this respect. A dissertation has been published on this subject by Dr. Hahn of Vienna, entitled *De Efficacia Mixtionis in Mutandis Corporum Voluminibus*, in which all the remarkable instances of the variation of density have been collected. All we can do is to record such instances as are of chief importance, being articles of commerce. The most scrupulous examination of this, or perhaps of any mixture, has been lately made by Dr. Blagden (now Sir Charles Blagden) of the Royal Society, on the requisition of the Board of Excise. He has published an account of the examination in the Philosophical Transactions of 1791 and 1792. The alcohol was almost the strongest that can be produced; and its specific gravity, when of the temperature 60°, was 0·825. The whole mixtures were of the same temperature. Column 1 of the Table contains the lb. oz. or other measures by weight, of alcohol in the mixture. Col. 2 contains the pounds or ounces of water. Col. 3 is the sum of the bulks of the ingredients, the bulk of a pound or ounce of water being accounted 1. Col. 4 is the observed specific gravity of the mixture. Col. 5 is the specific gravity which would have been observed if the ingredients had each retained its own specific gravity; calculated by dividing the sum of the two numbers of the first and second columns by the corresponding number of the third. Col. 6 is the difference of col. 4 and col. 5, and exhibits the condensation.

A.	W.	Volume.	Specific Gravity observed.	Sp. Gr. calculated.	Condensation.
20	1	24·2424	0·8250	0·8250	00
20	2	25·2424	0·8360	0·8320	40
20	3	26·2424	0·8457	0·8383	74
20	4	27·2424	0·8543	0·8443	100
20	5	28·2424	0·8621	0·8498	123
20	6	29·2424	0·8692	0·8549	143
20	7	30·2424	0·8757	0·8597	160
20	8	31·2424	0·8817	0·8642	175
20	9	32·2424	0·8872	0·8684	188
20	10	33·2424	0·8923	0·8725	199
20	11	34·2424	0·8971	0·8762	216
20	12	35·2424	0·9014	0·8796	218
20	13	36·2424	0·9055	0·8829	226
20	14	37·2424	0·9093	0·8860	233
20	15	38·2424	0·9129	0·8891	238
20	16	39·2424	0·9162	0·8919	243
20	17	40·2424	0·9193	0·8946	247
20	18	41·2424	0·9223	0·8971	252
20	19	42·2424	0·9250	0·8996	254
20	20	43·2424	0·9276	0·9019	257
20	20	44·2424	0·9300	0·9041	259
19	20	43·0303	0·9325	0·9063	262
18	20	48·1182	0·9349	0·9087	262
17	20	40·6061	0·9375	0·9112	263
16	20	39·3039	0·9402	0·9139	263
15	20	38·1818	0·9430	0·9167	263
14	20	36·9697	0·9458	0·9197	261
13	20	35·7576	0·9488	0·9229	259
12	20	34·5455	0·9518	0·9263	255
11	20	33·3333	0·9549	0·9300	249
10	20	32·1212	0·9580	0·9340	240
9	20	30·9091	0·9612	0·9382	230
8	20	29·6970	0·9644	0·9429	215
7	20	28·4849	0·9675	0·9479	196
6	20	27·2727	0·9707	0·9533	174
5	20	26·0606	0·9741	0·9593	148
4	20	24·8485	0·9777	0·9659	118
3	20	23·6364	0·9818	0·9731	87
2	20	22·4242	0·9864	0·9811	54
1	20	21·2121	0·9924	0·9900	24
0	20	20·0000	1·0000	1·0000	

The condensation is greatest when sixteen ounces and a half of alcohol have been added to twenty of water, and the condensation is  $\frac{3}{133}$ , or nearly one-thirty-sixth of the computed density. Since the specific gravity of alcohol is 0·825, it is evident that sixteen ounces and a half of alcohol and twenty ounces of water have equal bulk. So that the condensation is greatest when the substances are mixed in equal volumes; and eighteen gallons of alcohol mixed with eighteen gallons of water will produce not thirty-six gallons of spirits, but thirty-five only. This is the mixture to which our revenue laws refer, declaring it to be one to six or one in seven under proof, and to weigh seven pounds thirteen ounces per gallon. This proportion was probably selected as the most easily composed, viz. by mixing equal measures of water and of the strongest spirit which the known processes of distillation could produce. Its specific gravity is 0·939 very nearly. This elaborate examination of the mixture of water and alcohol is a standard se-

ries of experiments to which appeal may always be made, whether for the purposes of science or of trade. The regularity of the progression is so great that in the column we examined, viz. that for temperature 60°, the greatest anomaly does not amount to one part in 6000. The form of the series is also very judiciously chosen for the purposes of science. It would perhaps have been more directly stereometrical had the proportions of the ingredients been stated in bulk which are more immediately connected with density. But the author has assigned a very cogent reason for his choice, viz. that the temperature of bulk varies by a change of temperature, because the water and spirits follow different laws in their expansion by heat.

Mr. Lambert, one of the first mathematicians and philosophers of Europe, in a dissertation in the Berlin Memoirs (1762), gives a narration of experiments on the brines of common salt, from which he deduces a very great condensation, which he attributes to an absorption in the weak brines of the salt, or a lodgment of its particles in the interstices of the particles of water. Mr. Achard of the same academy, in 1785, gives a very great list of experiments on the bulk of various brines, made in a different way, which show no such introspection; and Dr. Watson, formerly regius professor of chemistry at Cambridge, thinks this confirmed by experiments which he narrates in his Chemical Essays. We cannot assent to either side, and do not think the experiments decisive. We incline to Mr. Lambert's opinion; for this reason, that in the successive dilutions of sulphuric acid and nitric acid there is a most evident and remarkable condensation. Now what are these but brines, of which we have not been able to get the saline ingredient in a separate form? The experiments of Mr. Achard and Dr. Watson were made in such a way that a single grain in the measurement bore too great a proportion to the whole change of specific gravity. At the same time, some of Dr. Watson's are so simple in their nature that it is very difficult to withhold the assent. Experiments have also been made which seem sufficient for deciding the question. 'Whether the salt can be received into the pores of the water, so as to increase its weight without increasing its bulk?' and we must grant that it may. We do not mean that it is simply lodged in the pores as sand is lodged in the interstices of small shot; but the two together occupy less room than when separate. The experiments of Mr. Achard were insufficient for a decision, because made on so small a quantity as 600 grains of water. Dr. Watson's experiments have, for the most part, the same defect. Some of them, however, are of great value in this question, and are very fit for ascertaining the specific gravity of dissolved salts.

Specific gravity, says Dr. Ure, is the density of the matter of which any body is composed, compared to the density of another body, assumed as the standard. This standard is pure distilled water, at the temperature of 60° Fahrenheit. To determine the specific gravity of a solid we weigh it, first in air, and then in water. In the latter case it loses of its weight a quantity pre-

cisely equal to the weight of its own bulk of water; and hence, by comparing this weight with its total weight, we find its specific gravity. The rule therefore is, Divide the total weight by the loss of weight in water, the quotient is the specific gravity. If it be a liquid, or a gas, we weigh it in a glass or other vessel of known capacity; and, dividing that weight by the weight of the same bulk of water, the quotient is, as before, the specific gravity.

To calculate the mean specific gravity of a compound from those of its components is a problem of perpetual recurrence in chemistry. It is only by a comparison of the result of that calculation, with the specific gravity of the compound experimentally ascertained, that we can discover whether the combination has been accompanied with expansion or condensation of volume. As several respectable experimental chemists (see ALLOY, and AMMONIA) seem deficient in this part of chemical computation, I shall here insert a short abstract of a paper which I published on this subject in the seventh number of the Journal of Science.

The specific gravity of one body is to that of another as the weight of the first, divided by its volume, is to the weight of the second, divided by its volume; and the mean specific gravity of the two is found by dividing the sum of the weights by the sum of the volumes.

Let  $W, w$ , be the two weights;  $V, v$ , the two volumes;  $P, p$ , the two specific gravities; and  $M$  the calculated mean specific gravity. Then  $M = \frac{W+w}{V+v}$ ; the formula by which I computed the second column of Table II.

$$\text{And } V+v = \frac{W}{P} + \frac{w}{p} = \frac{Wp+wp}{Pp}.$$

Hence,

$$\frac{W+w}{V+v} = \frac{W+w}{\frac{Wp+wp}{Pp}} = \frac{(W+w)Pp}{Wp+wp} = M.$$

When the difference in density between the two substances is considerable, as it is with sulphuric acid and water, the errors produced by assuming the arithmetical mean for the true calculated mean are excessive. If we take copper and tin, however, then the arithmetical mean,  $\frac{8.89 + 7.29}{2} = 8.09$ , differs very little from  $8.01$ , the accurate mean density.

By a similar error, I suppose, in calculating the mean density of liquid muriatic acid in its different stages of dilution, the celebrated Kirwan has long misled the chemical world. He asserted that the mean specific gravity of the components being also the experimental mean, there is no condensation of volume as with other acid dilutions. And the illustrious Berthollet has even assigned a cause for this supposititious fact. I find, on the contrary, that 50 of acid, specific gravity 1.1920, with 50 of water, give out heat, and have their volume diminished in the ratio of 100 to 99.28. The experimental specific gravity is 1.0954; that by the exact rule is only 1.0875.

The preceding formula may be presented under a still more convenient form.  $P_p$  being

the specific gravities of the two components, we have  $P = \frac{W}{V}$  and  $p = \frac{w}{v}$ ; whence  $V = \frac{W}{P}$ ,  $v = \frac{w}{p}$ .

In the condition when  $W = w = 1$ , we have then  $V = \frac{1}{P}$ ,  $v = \frac{1}{p}$ , and consequently, therefore,

$$2 \Delta = (P-p) \times \frac{\frac{1}{P} - \frac{1}{p}}{\frac{1}{P} + \frac{1}{p}} = \frac{(P-p)(p-P)}{P+p} = -\frac{(P-p)^2}{P+p}.$$

This value being constantly negative proves that the true value of the specific gravity of the mixture, represented by  $\frac{W+w}{V+v}$ , is always smaller than the false value,  $\frac{1}{2} \left( \frac{W}{V} + \frac{w}{v} \right)$ .

Example of the last formula:—

$$\text{Gold and silver, } \frac{19.3 + 10.5}{2} = 14.9 = \text{false}$$

$$\text{or arithmetical mean specific gravity. } \frac{(P-p)^2}{P+p} = \frac{(19.3 - 10.5)^2}{29.8} = \frac{(8.8)^2}{29.8} = \frac{77.44}{29.8} = 2.6 = 2\Delta;$$

and  $\Delta = 1.3$ , which being subtracted from the arithmetical mean, 14.9, leaves 13.6 for the true mean specific gravity as directly obtained by the formula  $\frac{(W+w)Pp}{Pw+pw}$ .

Sulphuric acid TABLE, showing the erroneous results of the common method.

Acid in 100.	Arithmetical mean density.	Experimental density.	Apparent volume.
100		1.8480	100
90	1.7632	1.8115	97.3
80	1.6784	1.7120	98.0
70	1.5936	1.5975	99.7
60	1.5088	1.4860	101.5
50	1.4240	1.3884	102.6
40	1.3392	1.2999	103.02
30	1.2544	1.2184	102.95
20	1.1696	1.1410	102.50
10	1.0848	1.0680	101.57

Mr. Robertson, in order to determine the specific gravity of men, prepared a cistern seventy-eight inches long, thirty inches wide, and thirty inches deep; and, having procured ten men for his purpose, the height of each was taken, and his weight; and afterwards they plunged successively into the cistern. A ruler, graduated to inches and decimal parts of an inch, was fixed to one end of the cistern, and the height of the water noted before each man went in, and to what height it rose when he immersed himself under its surface. The following table contains the several results:—

No. of men.	Height.	Weight.	Height of water before im- mersed.	Height of water when im- mersed.	Water raised.	Solidity.	Weight of water.
			Ft. In.	Inches.			Pounds.
1	6 2	161	19·30	21·20	1·90	2·573	160·8
2	5 10 $\frac{1}{2}$	147	19·25	21·16	1·91	2·586	161·6
3	5 0 $\frac{1}{2}$	156	19·21	21·06	1·85	2·505	156·6
4	5 6 $\frac{1}{2}$	140	19·17	21·21	2·04	2·763	172·6
5	5 5 $\frac{1}{2}$	158	19·13	21·21	2·08	2·817	176·0
6	5 5 $\frac{1}{2}$	158	19·09	21·26	2·17	2·939	183·7
7	5 4 $\frac{1}{2}$	140	19·05	21·06	2·01	2·722	170·1
8	5 3 $\frac{1}{2}$	132	19·01	20·86	1·85	2·505	156·6
9	5 4 $\frac{1}{2}$	121	18·97	20·76	1·79	2·424	151·5
10	5 3 $\frac{1}{2}$	146	18·93	20·66	1·73	2·343	146·4

One of the reasons, Mr. Robertson says, that induced him to make these experiments was a desire of knowing what quantity of fir or oak timber would be sufficient to keep a man afloat in river or sea-water, thinking that most men were specifically heavier than river or common fresh water; but the contrary appears from the trials above recited: for, excepting the first and last, every man was lighter than his equal bulk of fresh water, and much more so than his equal bulk of sea-water: consequently, if persons who fall into water had presence of mind enough to avoid the fright usual on such accidents, many might be preserved from drowning; and a piece of wood not larger than an oar would buoy a man partly above water as long as he had spirits to keep his hold.—Philosophical Transactions, vol. I. art. 5.

#### SPECIFICATION. See PATENT.

SPECIFICATION, in Scotch law, signifies the making a new property from the materials belonging to another: as wine from grapes; or other instances in which the thing converted can by no means be reduced to its original state.

#### SPECIFICK. See SPECIFIC and SPECIFICAL.

SPECIFICS, in medicine. By specifics is not meant such as infallibly, and in all patients, produce salutary effects. Such medicines are not to be expected, because the operations and effects of remedies are not formally inherent in them, but depend upon the mutual action and re-action of the body and medicine upon each other; hence the various effects of the same medicine in the same kind of disorders in different patients, and in the same patient at different times. By specific medicines we understand such medicines as are more infallible than any other in any particular disease. See MEDICINE, Index.

SPECIMEN, n.s. Lat. *specimen*. A sample; a part of any thing exhibited, that the rest may be known.

Several persons have exhibited *specimens* of this art before multitudes of beholders.

*Addison's Spectator.*

SPECIOUS, adj. { Fr. *spécieux*; Lat. *specie-* Spe'ciously, adv. { *ciosus*. Showy; pleasing to the view: the adverb corresponding.

Thus in the glebe the deadly nightshade grows,  
Flaunts in the sun and mingles with the rose,  
The *specious* bane the prowling urchin spies:  
Touch, touch it not!—He gorges it, and dies.

*Whyte's Poems.*

Piety is opposed to hypocrisy and insincerity; especially to that personated devotion under which any kind of impiety is wont to be disguised, and put off more speciously.

*Hammond.*

The rest, far greater part,  
Will deem in outward rites and *specious* forms,  
Religion satisfied.

*Milton.*

Bad men boast

Their *specious* deeds on earth, which glory excites,  
Or close ambition varnished o'er with zeal.

*Id.*

Somewhat of *specious* they must have to recommend themselves to princes; for folly will not easily go down in its natural form.

*Dryden.*

Temptation is of greater danger, because it is covered with the *specious* names of good nature and good manners.

*Rogers.*

This is the only *specious* objection which our Romish adversaries urge against the doctrine of this church in the point of celibacy.

*Atterbury.*

SPEC'K, n.s. & v.a. Sax. *speccēc*. A small discoloration; a spot.

So dreadfully he towards him did pass,  
Forelifting up aloft his *speckled* breast,

And often bounding on the bruised grass,  
As for great joy of his new comen guest.

*Faerie Queene.*

Flower

Carnation, purple, azure, or *speck'd* with gold.

*Milton.*

*Speckled* vanity

Will sicken soon and die,  
And leprosy sin will melt from earthly mould.

*Id.*

Then are they happy, when  
No *speck* is left of their habitual stains;  
But the pure aether of the soul remains.

*Dryden's Aeneid.*

Saw'st thou not late a *speckled* serpent rear  
His gilded spires to climb on yon fair tree?  
Before thi happy minute I was he.

*Dryden.*

Every *speck* does not blind a man.

*Government of the Tongue.*

The smiling infant in his hand shall take  
The crested basilisk and *speckled* snake;  
Pleased the green lustre of the scales survey,  
And with their forky tongue and pointless sting shall play.

*Pope's Messiah.*

The tortoise here and elephant unite,  
Transformed to combs, the *speckled* and the white.

*Id.*

SPECTACLE, n.s. { Fr. *spectacle*; Latin

SPEC'TACLED, adj. { *spectaculum*. A show; a gazing stock; any thing exhibited to the view as eminently remarkable: in the plural, glasses to assist the sight: *spectacled*, furnished with such

We are made a *spectacle* unto angels and men.

1 Cor. iv. 9.

Forth riding underneath the castle wall,  
A dunghill of dead carcases he spied.  
The dreadful *spectacle* of that sad house of pride.

*Faerie Queene.*

In open place produced they me,  
To be a publick *spectacle* to all.

*Shakspeare. Henry VI.*

The sixth age shifts  
Into the lean and slippered pantaloons,  
With *spectacles* on nose, and pouch on side.

*Shakspeare.*

All tongues speak of him, and the bleared sights  
Are *spectacled* to see him. *Id. Coriolanus.*  
We have helps for sight above *spectacles* and glasses.

*Bacon.*

When pronouncing sentence, seem not glad ;  
Such *spectacles*, though they are just, are sad.

*Denham.*

Shakspeare was naturally learned : he needed not  
the *spectacles* of books to read nature ; he looked inwards  
and found her there.

*Dryden on Dramatick Poesy.*

The first *spectacle*-maker did not think that he was  
leading the way to the discovery of new planets.

*Grew.*

This is the reason of the decay of sight in old  
men, and shews why their sight is mended by *spectacles*.  
*Newton.*

This day then let us not be told,  
That you are sick, and I grown old ;  
Nor think on your approaching ills,  
And talk of *spectacles* and pills. *Swift.*

The world grown old, her deep discernment  
shows,

Claps *spectacles* on her sagacious nose,  
Peruses closely the true Christian's face,  
And finds it a mere mask of sly grimace,  
Usurp God's office, lays his bosom bare,  
And finds hypocrisy close lurking there. *Couper.*

SPECTACLES, in dioptries, a machine consisting of two lenses set in silver, horn, &c., to assist the defects of the organ of sight. Old people, and others who have flat eyes, use convex spectacles, which cause the rays of light to converge so as to meet upon the retina : whereas myopes, or short-sighted people, use concave lenses for spectacles, which cause the rays to diverge, and prevent their meeting ere they reach the retina. See OPTICS, Index.

Spectacles are certainly the most valuable of all optical instruments, though there is not the same science and mechanical ingenuity displayed in the making of them as in the construction of microscopes and telescopes. A man, especially if accustomed to spend his time among books, would be much to be pitied, when his sight begins to fail, could he not in a great measure restore it by the aid of spectacles ; but there are some men whose sight cannot be aided by the use either of convex or concave glasses. The following method adopted by one of these to aid his sight is certainly worthy of notice :—When about sixty years of age, this man had almost entirely lost his sight, seeing nothing but a kind of thick mist, with little black specks, which appeared to float in the air. He knew not any of his friends ; he could not even distinguish a man from a woman ; nor could he walk in the streets without being led. Glasses were of no use to him ; the best print, seen through the best spec-

tacles, seemed to him like a daubed paper. Wearied with this melancholy state, he thought of the following expedient. He procured some spectacles with very large rings ; and, taking out the glasses, substituted in each circle a conic tube of black Spanish copper. Looking through the large end of the cone, he could read the smallest print placed at its other extremity. These tubes were of different lengths, and the openings at the end were also of different sizes ; the smaller the aperture the better could he distinguish the smallest letters ; the larger the aperture the more words or lines it commanded, and consequently the less occasion was there for moving the head and the hand in reading. Sometimes he used one eye, sometimes the other, alternately relieving each ; for the rays of the two eyes could not unite upon the same object when thus separated by two opaque tubes. The thinner these tubes, the less troublesome are they. They must be totally blackened within so as to prevent all shining and they should be made to lengthen or contract, and enlarge or reduce the aperture at pleasure. When he placed convex glasses in these tubes, the letters indeed appeared larger, but not so clear and distinct as through the empty tube ; he also found the tubes more convenient when not fixed in the spectacle rings ; for, when they hung loosely, they could be raised or lowered with the hand, and one or both might be used as occasion required. It is almost needless to add that the material of the tubes is of no importance, and that they may be made of iron or tin as well as of copper, provided the insides of them be sufficiently blackened. See La Nouvelle Bigarure for February 1754, or Monthly Magazine for April 1799.

SPECTATION, n.s. Lat. *spectatio*. Regard ; respect.

This simple *spectation* of the lungs is differenced from that which cononitutes a pleurisy. *Harvey.*

SPECTATOR, n.s. Fr. *spectateur* ; Latin *spectator*. A looker-on ; a beholder.

More

Than history can pattern, though devised  
And played to take *spectators*. *Shakspeare.*

If it proves a good repast to the *spectators*, the dish pays the shot. *Id. Cymbeline.*

Thou standest i' the state of hanging, or of some  
death more long in *spectatorship*, and crueler in suf-  
fering. *Shakspeare.*

An old gentleman mounting on horseback, got up  
heavily ; but desired the *spectators* that they would  
count fourscore and eight before they judged him. *Dryden.*

What pleasure hath the owner more than the *spec-  
tator* ? *Seed.*

SPECTRA, OCULAR, images presented to the eye after removing them from a bright object, or closing them. When any one has long and attentively looked at a bright object, as at the setting sun, on closing his eyes, or removing them, an image, which resembles in form the object he was attending to, continues some time to be visible. This appearance in the eye we shall call the ocular spectrum of that object. These ocular spectra are of four kinds : 1. Such as are owing to a less sensibility of a defined part of the retina or spectra from defect of sensi-

bility. 2. Such as are owing to a greater sensibility of a defined part of the retina or spectra from excess of sensibility. 3. Such as resemble their object in its color as well as form; which may be termed direct ocular spectra. 4. Such as are of color contrary to that of their object, which may be termed reverse ocular spectra.

SPECTRE, n.s. Fr. *spectre*; Lat. *spectrum*. Apparition; supposed appearance of persons dead.

The very poetical use of the word for a *spectre*, doth imply an exact resemblance to some real being it represents. *Stillingfleet.*

The ghosts of traitors from the bridge descend, With bold fanatick *spectres* to rejoice. *Dryden.*

Those are nothing but *spectres* the understanding raises to itself, to flatter its own laziness. *Locke.*

This prism had some veins running along within the glass, from the one end to the other, which scattered some of the sun's light irregularly, but had no sensible effect in increasing the length of the coloured *spectrum*. *Newton's Opticks.*

SPECTRE OF THE BROKEN, a curious phenomenon observed on the Broken, one of the Harz mountains in Hanover. M. Haue gives the following account of it:—‘After having been here,’ says he, ‘for the thirtieth time, and having procured information respecting the above-mentioned atmospheric phenomenon, I was at length, on the 23d of May 1797, so fortunate as to have the pleasure of seeing it; and perhaps my description may afford satisfaction to others who visit the Broken through curiosity. The sun rose about four o'clock, and, the atmosphere being quite serene towards the east, his rays could pass without any obstruction over the Heinrichshöhe. In the south-west however, towards Achtermannshöhe, a brisk west wind carried before it thin transparent vapors, which were not yet condensed into thick heavy clouds. About a quarter past four I went towards the inn, and looked round to see whether the atmosphere would permit me to have a free prospect to the south-west; when I observed, at a very great distance towards Achtermannshöhe, a human figure of a monstrous size. A violent gust of wind having almost carried away my hat, I clapped my hand to it by moving my arm towards my head, and the colossal figure did the same. The pleasure which I felt on this discovery can hardly be described; for I had already walked many a weary step in the hopes of seeing this shadowy image, without being able to gratify my curiosity. I immediately made another movement by bending my body, and the colossal figure before me repeated it. I was desirous of doing the same thing once more—but my colossus had vanished. I remained in the same position, waiting to see whether it would return; and in a few minutes it again made its appearance on the Achtermannshöhe. I paid my respects to it a second time, and it did the same to me. I then called the landlord of the Broken, and, having both taken the same position which I had taken alone, we looked towards the Achtermannshöhe, but saw nothing. We had not, however, stood long, when two such colossal figures were formed over the above eminence, which repeated our compliments by bending their bodies as we did; after which they vanished.

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We retained our position; kept our eyes fixed on the same spot, and in a little the two figures again stood before us, and were joined by a third. Every movement that we made by bending our bodies these figures imitated; but with this difference, that the phenomenon sometimes was weak and faint, sometimes strong and well defined. Having thus had an opportunity of discovering the whole secret of this phenomenon, I can give the following information to such of my readers as may be desirous of seeing it themselves. When the rising sun, and according to analogy the case will be the same at the setting sun, throws his rays over the Broken upon the body of a man standing opposite to fine light clouds floating around or hovering past him, he needs only fix his eyes stedfastly upon them, and, in all probability, he will see the singular spectacle of his own shadow, extending to the length of 500 or 600 feet, at the distance of about two miles before him.’ In the Manchester Transactions is an account of a similar phenomenon observed by Dr. Ferrier, on a hill in England.

A belief that supernatural beings sometimes make themselves visible, and that the dead sometimes revisit the living, has prevailed among most nations, especially in the rudest stages of society. It was common among the Jews, among the Greeks, and among the Romans, as we find from the Scriptures and from the poems of Homer and Virgil. Celestial appearances were indeed so often exhibited to the Jews that the origin of their belief is not difficult to be explained. The divine being manifested himself to each of the patriarchs by some sensible sign, generally by a flame of fire, as he did to Moses. Under this semblance also did he appear to the Israelites during their abode in the desert and after they obtained a settlement in the land of Canaan. Nor did they believe that heavenly beings alone assumed a sensible appearance: they believed that deceased men also sometimes revisited this world. When Saul went to consult the witch at Endor, he asked her to bring up the person whom he should name to her; a proof that he considered his demand as possible to be performed, and therefore that he probably acted under the influence of popular opinion. The same opinions had been generally entertained at a much earlier period; for necromancy and witchcraft, the arts by which the dead were supposed to be raised, had been prohibited while the Israelites were in the wilderness and yet untainted with the vices of the Canaanites. They must therefore have derived them from Egypt, the cradle of superstition, as well as of the arts and sciences. Among the Greeks and Romans the apparition of spectres was generally believed. On innumerable occasions the gods are said to have discovered themselves to the eyes of mortals, to have held conferences, and to have interposed their aid. The ghosts of the dead, too, are said to have appeared. When Æneas, amidst the distraction and confusion of his mind in flying from the destruction of Troy, had lost his wife by the way, he returned in search of her. Her shade appeared to him, we are told (for she herself had been slain), with the same aspect as before, but her figure was larger. She endeavoured to assuage the grief of

her unhappy husband by ascribing her death to the appointment of the gods, and by foretelling the illustrious honors which yet awaited him. But when Aeneas attempted to clasp her in his arms the phantom immediately vanished into air. From this story we may observe that the ancients believed that the umbræ, or shades, retained nearly the same appearance after death as before; that they had so far the resemblance of a body as to be visible; that they could think and speak as formerly, but could not be touched. This description applies equally well to those shades which had passed the river Styx, and taken up their residence in the infernal regions. Such were the shades of Dido, of Deiphobus, and of all those whom Aeneas met with in his journey through the subterraneous world.

It appears from the writings of modern travellers who have visited rude and savage nations that the belief of spectres is no less common among them. Mr. Bruce tells us that the priest of the Nile affirmed that he had more than once seen the spirit of the river in the form of an old man with a white beard. Among the Mahometans the doctrine of spectres seems to be reduced to a regular system by the accounts which they give of genii. Whoever has read the Arabian Nights' Entertainments must have furnished his memory with a thousand instances of this kind. Their opinions concerning genii seem to be a corrupted mixture of the doctrines of the Jews and ancient Persians. In Christian countries, too, notwithstanding the additional light which their religion has spread, and the great improvement in the sciences to which it has been subservient, the belief of ghosts and apparitions was until lately very general, especially among the lower ranks. Many still believe that evil spirits make their appearance in order to terrify wicked men, especially those who have committed murder. They suppose that the spirits of dead men assume a corporeal appearance, hover about church-yards and the houses of the deceased, or haunt the places where murders have been committed. In some places it is believed that beings have been seen bearing a perfect resemblance to men alive. These spectres, in Scotland, are called wreaths, and people are often to be found who affirm that they have seen such wreaths of their relations a longer or shorter time before their death.

In the Highlands of Scotland the second sight is still believed we know by many (see SECOND SIGHT); viz. that future events are foretold by certain individuals by means of spectral representation: and so general has the belief of spectres, been that this circumstance may be thought by some sufficient to prove that it must have its foundation in human nature, or must rest upon retorical evidence. When any doctrine has been universally received by all nations, by generations living several thousand years from one another, and by people in all the different stages of society, there is certainly a strong presumption that such a doctrine has its foundation in reason and in truth. In this way we sometimes argue in favor of the existence of a God, concerning moral distinction, and the doctrine of a future state: and certainly so far we argue well. But,

if the same argument be applied to idolatry, to sacrifices, or to apparitions, we shall find that it is applied improperly. Idolatry was very general among ancient nations; so was the offering of sacrifices; so was polytheism; but they were by no means universal. Should we allow, for the sake of shortening the argument, that all ancient nations were polytheists and idolaters, and presented oblations to their imaginary deities, all that could be concluded from this concession is that they fell into these mistakes from their ignorance and from the rude state of society, from which their imperfect knowledge of theology and moral philosophy was never able to rescue them. These erroneous notions fled before the brightness of the Christian system; while the doctrines of the existence of God, of moral distinction, and of a future state, have been more thoroughly confirmed and ascertained. The same thing may be said of the belief of spectres. However generally it has been adopted in the first stages of society, or by civilised nations who had made but little progress in the study of divine things, it has been rejected, we may say invariably, wherever theology and philosophy have gone hand in hand.

If we glance at the popular evidence in favor of spectres, it will be found very defective. They only appear to one person at a time; they are seen only in the night; they are visible only to ignorant, illiterate, and credulous persons, and never present themselves before men of education and learning. That spectres only appear to one person at a time, even though there are more in company, is also an objection against the credibility of their appearance quite insurmountable. How is it possible that two men of eye-sight equally good, directing their eyes to the same spot, should not see so large an object as that of a man or woman at a small distance equally well? Ghosts have seldom any secrets to disclose; they might be proclaimed to a multitude with as much propriety as confined to one person. See Farmer on Miracles; a book in which this question is fully examined. Spectres again appear only in the night. But why should they shun the light of the sun? Those mischievous ghosts that Glanville mentions might indeed have some reason to choose midnight for the execution of their pranks, as they would be more easily detected in open day. Spectres not only choose the most improper time, but the most improper persons. To render the testimony of any person credible, he must not only be a man of veracity, but he must have sufficient ability to judge of the subject to which he is to bear witness. It is not on the evidence of an ignorant illiterate person, who has more fancy and fear than judgment, that we are to rest our belief of what is supernatural. It is also worthy of remark that we have never heard of a ghost appearing to any person who did not previously believe their existence. A man must be prejudiced in favor of this opinion, or he will never see a ghost. But sensible men know, that he who has been accustomed to hear frightful stories of apparitions gliding through a church yard, or haunting some particular place, can scarcely pass through a church-yard or haunted spot, without conjuring up in his imagi-

nation the hideous phantoms which he has been accustomed to associate with such places. Is it strange, then, that an ignorant man, with a mind uncultivated and uninformed, with all the prejudices of the nursery about him, should imagine he sees ghosts in those places where he believes they hover, especially in the dead hour of midnight, when, with the slightest aid of the imagination, a cow may be turned into a monstrous phantom, and the reflection of the beams of the moon from a little water be converted into a ghost with a winding sheet? But why should apparitions shun men of understanding and learning? Why should learning be formidable to them? It was not so with the celestial messengers mentioned in the Scriptures: they appeared to the patriarchs and prophets; and the miracles there recorded were performed in the most public places, before the eyes of Rabbis, of Scribes, and Pharisees. Indeed this circumstance is sufficient to destroy the evidence of spectres. They have never been seen by any but men of weak or distempered minds, or by men who have previously believed in them.

To trace an opinion that has prevailed so generally in the world to its source, however, is a labor not unworthy of the philosopher, even though the opinion be false. It is always gratifying to detect the causes of error: it is no less useful; for, to refute error, it is often sufficient to point out the sources from which it has sprung. To reach the origin of the belief of spectres is not more difficult than to account for idolatry or polytheism. In the infant state of the intellectual powers every thing is considered as possessing life and intelligence. The child beats the stool over which he has fallen, with the same passion that he would treat his companion: the young girl talks to her doll as if it understood her: savages ascribe every change which they observe on the face of nature to the action of some animated being. As knowledge advances, they single out those beings which seem to produce the most striking effects, arrange them into some kind of order, and divide the government of the world among them. Unable, at the same time, to conceive any notion of a pure spirit, they imagine those divinities are corporeal beings. This is the foundation of idolatry. The belief of spectres is but another step. That these animated corporeal beings, to whom they address their prayers, and who preside over the world, should on particular occasions display themselves to the human eye, is what they must be previously disposed to expect. Hence the numberless appearances of the heathen gods, of the Persian and Mahometan genii. The belief of ghosts may be easily deduced from the opinions entertained respecting a future state. These opinions are founded on that essential doctrine of natural religion, that there is another world in which men shall exist when death has removed them hence. This doctrine has been universally received both by savage and civilised nations; but, as might be expected, men have formed very different sentiments concerning the nature of a future state, of the situation and employments of departed spirits, according to the degree of knowledge which they possessed. But the general

opinion in ancient and rude nations was, that departed spirits retained the same external appearance, the same passions and principles as before. Nothing therefore was more natural than the opinion that they might occasionally revisit this world, from an anxious desire to alleviate the sufferings of those beloved friends and relations whom they had left behind them, or to communicate from the unseen world what might be important to their welfare. Upon such an errand did Creiisa appear to Aeneas. The apparition of the ghosts of murderers is easily explained upon the same general principles. The remorse and horror of mind which the murderer feels are supposed to haunt him in the other world, and to render his situation there intolerable (especially if the murder was never detected and punished), till he return and give information against himself. In this way, then, we think it highly probable the belief of spectres has originated. But many other causes concur to confirm and propagate this belief. These are, imperfect vision united with fear, dreams, opium, diseases, drunkenness, and artifice. 1. Indistinct vision is one source of apparitions, especially when the mind is under the influence of fear. It is well known that the sense of seeing conveys no idea of distance till improved by experience and observation. In the day time we seldom commit mistakes, because we know the object at which we look; but at night when we see objects obscurely, and know not what they are, we have no distinct idea, either of their distances or of their magnitude. We may mistake a bush that is near us for a tree at a distance; or, if the imagination be under the influence of fear, it will easily convert it into a gigantic figure. Objects are always magnified in fog; so that when a fog happens in the night time, objects may be magnified to an enormous size. But, at any rate, whether there be fog in the night or not, there is such a great analogy between darkness and a fog, that, if the latter deceive us with respect to the size of objects, the former will also deceive us. 2. Dreams are another fertile source of apparitions. It is well known to every person that while the mind is under the influence of a dream it considers it as much a reality as it does any particular action while awake. Now if a person of a weak superstitious mind should have a very lively dream, which interests his passions, particularly the passion of fear, it may make so deep an impression, that he may be firmly convinced that he has actually seen with his eyes what has only passed before his imagination. 3. Spectres are sometimes also occasioned by opium. Gassendi the philosopher, found a number of people going to put a man to death for having intercourse with the devil; a crime which the poor wretch readily acknowledged. Gassendi begged of the people that they would permit him first to examine the wizard before putting him to death. They did so; and Gassendi, upon examination, found that the man firmly believed himself guilty of this impossible crime. He even offered to Gassendi to introduce him to the devil. The philosopher agreed; and, when midnight came, the man gave him a pill, which he said it was necessary to swallow before setting off. Gassendi took

the pill but gave it to his dog. The man, having swallowed his, fell into a profound sleep: during which he seemed much agitated by dreams. The dog was affected in a similar manner. When the man awoke, he congratulated Gassendi on the favorable reception he had met with from his sable highness. It was with difficulty Gassendi convinced him that the whole was a dream, the effect of soporific medicines, and that he had never stirred from one spot during the whole night. 4. That diseases, especially the night-mare, the hypochondria, hysterick passion, and madnesse, are another source of spectres, we have the strongest reason to affirm. Persons subject to the night-mare often imagine that they see spectres. This is still more the case with hypochondriac and hysterick persons, and those who are in any degree deranged in their intellects. Instances in proof of this we need not quote, as every person connected with these unfortunate people must have met with proofs of it. 5. Drunkenness also has the power of creating spectres. Its natural effect in most cases is to derange the understanding, to throw it off its guard, and to give full scope to that passion which has a natural disposition to gain an ascendancy; and sometimes it excites passions which scarcely seem to exist at any other time. It makes some men licentious, some furious, some all benevolence and kindness, some from being cowards it renders undaunted heroes. It seldom, if ever, excites fear; and therefore it may be thought strange that men should imagine they see ghosts when intoxicated. But it must be remarked that the ghosts which the drunkard sees, he sees not with the same alarm and terror as men who are sober. He is not afraid of them. He has the courage to converse with them, and even to fight with them, if they give him provocation. A man returning home intoxicated affirmed that he had met with the devil; and that after a severe encounter he had vanquished him and brought him to the ground, to which he had nailed him fast by driving his staff through his body. Next morning the staff was found stuck with great violence into a heap of turfs! 6. Many apparitions of spectres have no other origin than the artifices of the waggish or self-interested. Dr. Plot, in his Natural History of Oxfordshire, relates a marvellous story, to which the doctor gave full credit, but which after all turned out to be the invention of the memorable Joseph Collins of Oxford, otherwise called Funny Joe, who having hired himself as secretary to the commissioners under the name of Giles Sharp, by knowing the private traps belonging to the house, and by the help of pulvis fulminans and other chemical preparations, and letting his fellow servants into the scheme, carried on the deceit without discovery to the very last; insomuch that Dr. Plot, in his Natural History, relates the whole for fact, and concludes in this grave manner: 'That though tricks have been often played in affairs of this kind, many of the things above related are not reconcileable with juggling; such as the loud noises, beyond the power of man to make without such instruments as were not there; the tearing and breaking the beds; and throwing about the fire; the hoof treading out the candle; and the striving for the

sword, and the blow the man received from the pummel of it.'

SPEC'ULAR, *adj.* Lat. *specularis*. Having the qualities of a mirror or looking-glass: a mirror.

'It were but madness now t' impart  
The skill of *specular* stone.' *Donne.*

Quicksilver may, by the fire alone, in glass vessels, be turned into a red body; and from this red body may be obtained a mercury, bright and *specular* as before. *Boyle.*

A rough and coloured object may serve for a *speculum* to reflect the artificial rainbow. *Id. On Colours.*

#### The hidden way

Of nature wouldst thou know, how first she frames

All things in miniature, thy *specular* orb

Apply to well-dissected kernels; lo!

In each observe the slender threads

Of first beginning trees. *Philipps.*

A *speculum* of metal without glass, made some years since for optical uses, and very well wrought, produced none of those rings; and thence I understood that these rings arise not from the *specular* surface alone, but depend upon the two surfaces of the plate of glass, whereof the *speculum* was made, and upon the thickness of the glass between them. *Newton.*

SPECULARIA, among the Romans, were a kind of window casements, used before glass was introduced for this purpose. They consisted of transparant stones, called lapides speculares. See below.

SPECULARIS LAPIS, in the old system of mineralogy, a genus of talcs, composed of large plates visibly separate and of extreme thinness; and each fissile again separated into a number of plates still finer. See TALE. Of this genus there are three species:—1. The white shining specularis with large and broad leaves, commonly called isinglass and Muscovy glass; its lamella, or leaves, are extremely thin, elastic, and transparent; it makes not the least effervescence with aquafortis; and is not easily calcined in the fire. It is imported in great quantities; the miniature-painters cover their pictures with it; the antenn-makers sometimes use it instead of horn; and minute objects are usually preserved between two plates of it for examination by the microscope. 2. The bright brown specularis with broad leaves; a very valuable species though inferior to the former. 3. The purple bright specularis with broad leaves, which is the most elegant of all the talcs, and not less beautifully transparent than the first kind.

The lapis specularis is found in many parts of the world. The island of Cyprus abounds with it. It is very common also in Russia, and has of late been discovered to abound in the Alps, the Apennines, and many of the mountains of Germany. The ancients used it, instead of glass, in their windows.—Hill's History of Fossils, p. 72.

Some consider the lapis specularis to have been a species of gypsum, and composed of the acid of vitriol and calcareous earth. It came into use at Rome in the age of Seneca (Ep. 90), and, soon after its introduction, was applied not only to give light to apartments, but to protect fruit-trees from the severity of the weather; and it is recorded that the emperor Tiberius was enabled,

principally by its means, to have cucumbers at his table during almost every month in the year. Dr. Watson apprehends it is still used in some countries in the place of glass; however, it is well known that it was so used in the time of Agricola, for he mentions (De Nat. Fos., lib. v., p. 257) two churches in Saxony which were lighted by it. Agricola esteemed it to have been a species of plaster-stone; and in speaking of it he remarks that, though it could bear, without being injured, the heat of summer and the cold of winter, yet the largest masses of it were wasted by the rain. However, it differs from plaster-stone in this property, that it does not, after being calcined and wetted with water, swell and concrete into a hard stony substance.—Watson's Chemical Essays, vol. ii. p. 297, &c.

**SPECULATE**, *v. n. & v. a.* Fr. *speculer*;

**SPECULATION**, *n. s.*

**SPECULATIVE**, *adj.*

**SPECULATIVELY**, *adv.*

**SPECULATOR**, *n. s.*

of any thing with the mind; consider attentively: speculation is examination; power of sight; mental view or scheme: speculative is contemplative; theoretic; notional: the adverb corresponding: a speculator is an observer, or one who forms new theories.

This is a consideration not to be neglected, or thought an indifferent matter of mere speculation.

*Lesley.*

In all these things being fully persuaded, that what they did, it was obedience to the will of God, and that all men should do the like; there remained, after speculation, practice whereunto the whole world might be framed.

*Hooper.*

If all other uses were utterly taken away, yet the mind of man being by nature speculative, and delighted with contemplation in itself, they were to be known even for mere knowledge sake.

*Id.*

They who have, as who have not, whom their great stars

Throe and set high? servans

Which are to France the spics and speculations,  
Intelligent of our state.

*Shakspeare. King Lear.*

Thy bones are marrowless; thy blood is cold;  
Thou hast no speculation in those eyes

Thou star'st with.

*Shakspeare.*

Some take it for a speculative platform, that reason and nature woul'd that the best should govern, but nowise to create a right.

*Bacon's Holy War.*

Consider the quantity, and not speculate upon an intrinsical relation.

*Digby on Bodies.*

Thenceforth to speculations high or deep  
I turned my thoughts; and with capacious mind  
Considered all things visible.

*Milton.*

Man was not meant to gape or look upward, but to have his thoughts sublime; and not only behold but speculate their nature with the eye of the understanding.

*Browne.*

Although lapidaries and questuary enquirers affirm it, yet the writers of minerals, and natural speculators, conceive that stones which bear this name to be a mineral concretion.

*Id.*

He is dexterous in puzzling others, if they be not thorough-paced speculators in those great theories.

*More.*

From him Socrates derived the principles of morality, and most part of his natural speculations.

*Temple.*

In things purely speculative, as these are, and no ingredients of our faith, it is free to differ from one another in our opinions and sentiments.

*Burnet's Theory.*

As news-writers record facts which afford great matter of *speculation*, their readers *speculate* accordingly, and by their variety of conjectures, become consummate statesmen.

*Addison.*

It encourages *speculative* persons, who have no turn of mind to increase their fortunes.

*Id.*

News-writers afford matter of *speculation*.

*Id.*

All the boats had one *speculator*, to give notice when the fish approached.

*Broome on the Odyssey.*

These are not *speculative* flights or imaginary notions, but are plain and undeniable laws, that are founded in the nature of rational beings.

*Law.*

The **SPECULUM** for reflecting telescopes is made of a kind of white copper consisting of thirty-two parts fine red copper, one of brass, fifteen of grain tin, and three of white arsenic. The process given by the late J. Edwards, who was rewarded by the Board of Longitude for disclosing it to the public, is that generally followed still, and is thus given in the Nautical Almanac for 1787:—Melt the copper in a large crucible, employing some black flux composed of two parts of tartar and one of nitre; when melted add it to the brass and silver. Let the pure be melted in another crucible. Stir the whole well with a dry spatula of birch, and pour off the fused metal immediately into a large quantity of cold water. The sudden chill of the water will cause the fluid metal to divide into an infinite number of small particles, which will cool instantly. 2. If the copper be completely saturated, the fracture of one piece of this mixed metal will appear bright and of a glossy look, resembling the face of pure quicksilver. But if it is of a brown reddish color it wants a little more tin. To ascertain the required proportion melt a small quantity, known by weight, of the mixed metal with a known very small part of tin; and, if necessary, repeat the trial with different doses till the fracture of the new mixture looks as already described. Having now ascertained the necessary addition of tin that is required, proceed to the last melting of the whole metal, together with the additional proportional dose of tin; fuse the whole, observing the same cautions as before, and you will find that the mixture will melt with a much less heat than that for the first fusion. Have ready as many ounces of white arsenic in coarse powder as there are pounds in the weight of the metal; wrap up the arsenic in a small paper, and put it, with a pair of tongs, into the crucible; stir it well with the spatula, retaining the breath to avoid the arsenical fumes or vapors (which, however, are not found to be hurtful to the lungs), till they disappear; take the crucible off the fire, clear away the dross from the top of the metal, pour in about one ounce of powdered resin, with as much nitre, to give the metal a clean surface, and pour out the metal into the moulded flasks. 3. The speculum should be moulded with the concave surface downwards, and many small holes should be made through the sand upwards to discharge the air. The moulding sand from Highgate near London, used by the founders, is as good as any for casting these metallic mirrors. See TELESCOPE. The cast metal should be taken out from the sand of the flasks as soon as it has become solid, and while it is yet red-hot, and the face must be kept

downwards to prevent it from sinking. Holding it in that position by the git, force out the sand from the hole in the middle of the mirror with a piece of wood or iron, and place the speculum in an iron pot with a large quantity of hot ashes or small coals, so as to bury the speculum in them a sufficient depth. If the sand is not forced out of the hole, in the manner above directed, the metal, by sinking as it cools, will embrace the sand in the middle of the speculum so tight as to crack before it becomes entirely cold. And if the metal is not taken out of the sand, and put in a pot with hot ashes or coals to anneal it, the moisture from the sand will always break the metal. Let the speculum remain in the ashes till the whole is become quite cold. The git may be easily taken off by marking it round with a common fine half-round file, and giving it then a gentle blow. The metal is then to be rough ground and figured.

*Another composition.*—Another has been employed with great success by Rochon, director of the marine observatory at Brest. Of this composition the principal ingredient is platinum; but we think it unnecessary to add any farther description of Rochon's process, as the high price of platinum will, in all probability, forever prevent it from coming into general use for the speculums of telescopes. For the grinding of the speculum a very complicated process is recommended in Smith's Optics, and one not much more simple by Mr. Mudge, in the sixty-seventh volume of the Philosophical Transactions: but according to Mr. Edwards, whose speculums are the best, neither of these is necessary. Besides a common grindstone all the tools that he made use of were a rough grinder, which serves also as a polisher, and a bed of hones. When the speculum was cold he ground its surface bright on a common grindstone, previously brought to the form of the gage, and then took it to the rough grinder. This tool is composed of a mixture of lead and tin, or of pewter, and is made of an elliptical form, of such dimensions that the shortest diameter of the ellipse is equal to the diameter of the speculum, and the longest diameter is to the shortest in the proportion of ten to nine. This rough grinder may be fixed upon a block of wood, in order to raise it higher from the bench; and, as the metal is ground upon it with fine emery, a hole or pit must be made in the middle of it as a lodgement for the emery, and deep grooves be cut out across its surface with a graver for the same purpose. By means of a handle, fixed on the back of the metal with soft cement, the speculum can be whirled round upon this grinder so rapidly that a common laborer has been known to give a piece of metal, ~~scar~~ inches in diameter, so good a face and figure as to fit it for the hones in the space of two hours. When the metal is brought to a true figure it must be taken to a convex tool, formed of stones from Edgedon in Shropshire, between Ludlow and Bishop's Castle. The common blue hones, used by many opticians for this purpose, will scarcely touch the metal of Mr. Edward's speculums; but where they must be employed, for want of the others, as little water should be used as possible when the metal is put upon

them; because they cut better when but barely wet than when drenched with water. The stones, however, from Edgedon are greatly preferable; for they cut the metal more easily, and, having a very fine grain, they bring it to a smooth face. These stones are directed by Mr. Mudge to be cemented in small pieces upon a thick round piece of marble, or of metal made of tin and lead like the former composition, in such a manner that the lines between the stones may run straight from one side to the other; so that placing the teeth of a very fine saw in each of these divisions, they may be cleared from one end to the other of the cement which rises between the stones. As soon as the hones are cemented down, this tool must be fixed in the lathe, and turned as exactly true to the gage as possible. It should be of a circular figure, and but very little larger than the metal intended to be figured upon it. Mr. Edwards recommends it to be made about one-twentieth part longer in diameter than the speculum, because he has found that it does not then alter its focus; and he dissuades the use of much water on the hone pavement at the time of using it. When the metal is brought to a very fine face and figure by the bed of stones it is ready to receive a polish, which is given to it by the elliptical rough grinder covered with pitch. With respect to the consistency of this pitch Mr. Mudge and Mr. Edwards give very different directions. Whilst the former says that it should be neither too hard nor too soft, the latter affirms that the harder the pitch is the better figure it will give to the metal. Pitch may be easily made of a sufficient hardness by adding a proper quantity of resin; and, when it is hardened in this way, it is not so brittle as pitch alone, which is hardened by boiling. Mr. Edwards advises to make the mixture just so hard as to receive, when cold, an impression from a moderate pressure of the nail of one's finger. When the elliptical tool is to be covered with this mixture it must be made pretty warm, and every where of about the thickness of half-a-crown; and to give it the proper form it must, when somewhat cool, be pressed upon the face of the mirror, which has first been dipped in cold water, or covered over with very fine writing paper. All the superfluous pitch is now to be taken away from the edge of the polisher with a penknife, and a hole to be made in the middle accurately round with a conical piece of wood. This hole should go quite through the tool, and should be made of the same size, or somewhat less than the hole in the middle of the speculum. Mr. Edwards says that he has always found that small mirrors, though without any hole in the middle, polish much better, and take a more correct figure, for the polisher's having a hole in the middle of it. The polisher being thus formed it must be very gently warmed at the fire, and divided into several squares by the edge of a knife. These, by receiving the small portion of metal that works off in polishing, will cause the figure of the speculum to be more correct than if no such squares had been made. Mr. Mudge directs the polisher to be strewed over with very fine putty; but Mr. Edwards prefers colcothar of vitriol. Putty, says he, gives metals a white

lustre, or, as workmen call it, a silver hue; but good colcothar of vitriol will polish with a very fine and high black lustre, so as to give the metal finished with it the complexion of polished steel. The colcothar of vitriol should be levigated between two surfaces of polished steel, and wrought with a little water; when it is worked dry add a little more water. When the colcothar has been wrought dry three or four times it will acquire a black color, and will be sufficiently fine to give an exquisite lustre. This levigated colcothar must be put into a small phial and kept with some water upon it. When it is to be used, every part of the pitch-polisher must be first brushed over with a fine camel's hair brush, which has been dipped in pure water, and rubbed gently over a piece of dry clean soap. The washed colcothar of vitriol is then to be put upon the polisher, in a large quantity at once, so as to saturate the pitch and form a fine coating. With respect to the parabolic figure to be given to the mirror, Mr. Edwards assures us that a very little experience in these matters will enable any one to give it with certainty, by polishing the speculum in the common manner, only with cross strokes in every direction, upon an elliptical tool of the proper dimensions.

Mr. Edwards, in a letter to Dr. Maskelyne, published since his directions thus given, makes the following addition to his former directions, which, as it is short, we will here subjoin. 'Make the brilliant composition first of copper and tin. Melt the proportional quantity of silver and brass in a small crucible by itself. When you put the brilliant composition the second time into the crucible, add also the lump of brass and silver melted together before in a separate crucible; and, when the whole is now fluid, add the proportional quantity of arsenic, and then pour it off into the flasks, after the scoria is taken off, and a little powdered resin is thrown into it.' The reason assigned is, that as copper requires more heat to melt it than either silver or brass does, if the brass were put into the high heat of melting copper, its lapis calaminaris would calcine, which will not be the case when the ingot is made liquid by the lower heat of the second melting. The best fuel that Edwards found for melting the metal was coal-coke, as prepared by the malsters, which casts no smoke, and is more lasting than charcoal: he also found that the blueish hue of crown-glass, used for the eye-piece, best corrects the yellowish color of objects, as shown by a speculum, and particularly when No. 47 is the composition chosen. In trying the figure of the great speculum, Mr. Edwards rejects the diaphragm of Mr. Mudge as unnecessary, and adopts a more simple method, thus: when the specula and eye-piece are in their places, he fixes a circle (of white paper probably) of half an inch, or an inch in diameter, at the distance of from fifty to 100 yards, and gives it a broad black annular margin, by way of contrast; then, when the telescope is adjusted nicely to distinct vision thereby, the screw that moves the small mirror must be turned either way, until a dark haze surrounds the circle, or field of view, which will become broader and broader the farther the screw is turned; now, if

the haze is more distinct, and the edge of it better defined, when the screw turns to the right hand, or brings the small speculum nearer, from the point of distinct vision, than when the motion is in a contrary direction, the figure of the great speculum is spherical; but if, on the contrary, the edge of the haze is better defined by the opposite motion, then the figure is hyperbolical; and, lastly, if, at equal distances on each side of the true focal point, the appearance of the haze is the same, the figure is known to be properly parabolic, and fit for its office. The small speculum, in the Gregorian construction, being placed to receive converging rays from the large one, is required to be spherical, as we have before said; but in the Newtonian construction it is made plane, and of an oval shape, to reflect the rays to the eye, placed at an angle of 90°. Mr. Edwards says he received his instruction how to grind and polish one of these from his friend Dr. Herschel, when he lived at Bath. To grind one of the elliptical specula flat, a small tool of lead with emery is first used, and then two or more considerably larger ones are used; both the tools and bed of hones should not be less than six inches in diameter. The figure of the tools is not considered to be completed till the speculum can be first highly finished upon one of them, and afterwards be applied to another, without receiving any change: the last half dozen strokes should be in the direction of the longer axis of the ellipsis. When this is perfected, it must be polished upon the pitch-polisher, of a circular form, the diameter of which is greater than the transverse axis of the speculum by one-tenth. As Mr. Edwards speaks of Dr. Herschel as his friend, and as the doctor has not, that we know of, yet published the composition of his metal and mode of grinding, polishing, and figuring it, we may conclude that he practises Mr. Edwards's process, and particularly as Mr. Edwards gives us the following information in the postscript of his pamphlet:—'Dr. Herschel chiefly makes use of a Newtonian reflector, the focal distance of whose great mirror is seven feet, its aperture 6.25 inches, and power 227 and 460 times, though sometimes he uses a power of 6450 for the fixed stars. Note, if the metals of a Newtonian telescope are worked as exquisitely as those in Dr. Herschel's seven-feet reflectors, the highest power that such a telescope should bear, with perfect distinctness, will be given by multiplying the diameter of the great speculum by 74; and the focal distance of the single eye-glass may be found by dividing the focal distance of the great mirror by the magnifying power: thus,  $6.25 \times 74 = 462$ , the magnifying power; and  $\frac{7 \times 12}{462} = 0.182$  of an inch, will be the focal length of the single eye-glass required.'

See TELESCOPE.  
Mr. Little recommends the following proportions:—32 parts of the best bar copper, 4 parts of the brass of pin-wire,  $16\frac{1}{2}$  of tin, and  $1\frac{1}{4}$  of arsenic. Silver he rejects, as it has an extraordinary effect of softening the metal; and he found that the compound was not susceptible of the highest polish, unless it was extremely brittle. He first melts the brass, and adds to it about an

equal weight of tin. When this mixture is cold, he puts it into the copper, previously fused with black flux, adds next the remainder of the tin, and lastly the arsenic. This mixture he granulates, by pouring into cold water, as Mr. Edwards did, and fuses it a second time for casting.

**SPECULUM**, in surgery, an instrument for dilating a wound, or the like, to examine attentively. See **SURGERY**.

**SPEECH**, *n. s.* { Sax. *rpæcan*, to speak.

**SPEECHLESS**, *adj.* { The power of articulate utterance, or of expressing thoughts by words; language; talk; mention: the adjective corresponding.

There is neither speech nor language, but their voices are heard among them. *Ps. Common Prayer*.

A plague upon your epileptic visage!  
Smile you my speeches as I were a fool.

*Shakespeare. King Lear.*

The duke did me demand  
What was the speech among the Londoners,

Concerning the French journey. *Shakespeare.*

He fell down, foamed at mouth, and was speechless. *Id.*

I kneeled before him;  
Twas very faintly he said rise; dismissed me  
Thus, with his speechless hand. *Id. Curielanus.*

The great god Pan hath broken his pipes, and  
Apollo's priests are become speechless. *Raleigh.*

*Speech of a man's self ought to oe seldom.* *Bacon's Essays.*

The acts of God to human ears  
Cannot without process of speech be told. *Milton.*

There is none comparable to the variety of instructive expressions by speech, wherewith man alone is endowed, for the communication of his thoughts. *Holder on Speech.*

He that never hears a word spoken, it is no wonder he remains speechless; as any one must do, who from an infant should be bred up among mutes. *Id.*

A single vision transports them; it finds them in the eagerness and height of their devotion; they are speechless for the time that it continues, and prostrate when it departs. *Dryden.*

In speech be eight parts. *Accidence.*  
Speechless with wonder, and half dead with fear. *Addison.*

The constant design of these orators, in all their speeches, was to drive some one particular point. *Swift.*

Though our ideas are first acquired by various sensations and reflections, yet we convey them to each other by the means of certain sounds, or written marks, which we call words; and a great part of our knowledge is both obtained and communicated by these means, which are called speech. *Watts.*

There is a prurience in the speech of some, Wrath stays him, or else God would strike them dumb:

His wise forbearance has their end in view. They fill their measure, and receive their due. *Couper.*

**SPEED**, *v. n., v. a., &* { *Pret.* and *part. pass.*

**SPEEDILY**, *adv.* { *n. s.* sped and speeded.

**SPEEDY**, *adj.* { *Sax. rpidian; Belg. spoeden.* To make haste; move with celerity; succeed: to despatch in haste; hasten; assist: as a noun substantive, quickness; celerity; hurry; success: speedy is, quick; nimble; swift: the adverb corresponding.

O Lord, I pray thee send me good speed. *Genesis xxiv. 12.*

If any bring not this doctrine, receive him not into your house, neither bid him God speed. *Peter.*

So well they sped, that they be come at length  
Unto the place whereas the Paynem lay  
Devoid of outward sense and native strength,  
Covered with charmed cloud from view of day. *Faerie Queene.*

The tyrant's self, a thing unused, began  
To feel his heart relent with meer compassion;  
But, not disposed to ruth or mercy then,  
He sped him thence home to his habitation. *Fairfax.*

Macicau shewed them what an offence it was rashly to depart out of the city, which might be unto them dangerous, although they should speed never so well. *Knolles.*

Barbarossa, sped of that he desired, staid not long at Constantinople, but shaped his course towards Italy. *Id.*

Do you think me a swallow, an arrow, or a bullet? I have I, in my poor and cold motion, the expedition of thought! I speeded hither with the very extremest inch of possibility. *Shakespeare.*

Now if this suit lay in Bianca's power,  
How quickly should you speed. *Id.*

Make me not sighted like the basilisk:  
I've looked on thousands, who have sped the better  
By my regard, but killed none so. *Id. Winter's Tale.*

His horse full of windgalls, sped with the spavins,  
and rayed with the yellows. *Shakespeare.*

He that rides at high speed, and with a pistol kills a sparrow flying. *Id. Henry IV.*

The prince, your son, with meer conceit and fear  
Of the queen's speed, is gone. *Shakespeare.*

Post speedily to your husband,  
Shew him this letter. *Id. King Lear.*

How near's the other army?  
—Near, and on speedy foot: the main desery  
Stands on the hourly thought. *Id.*

He was chosen, though he stood low upon the roll, by a very unusual concurrence of providential events, happened to be sped. *Fell.*

When they strain to their utmost speed, there is still the wonted distance between them and their aims: all their eager pursuits bring them no accquests. *Decay of Piety.*

If prayers  
Could alter high decrees, I to that place  
Would speed before thee, and be louder heard. *Milton.*

Satan, toward the coast of earth beneath,  
Down from the ecliptick sped with hoped success,  
Throws his steep flight in many an airy wheel. *Id.*

Earth receives  
As tribute such a sunless journey brought  
Of incorporeal speed, her warmth and light;  
Speed! to describe whose swiftness number fails. *Id.*

Back with speediest sail  
Zophiel, of cherubim the swiftest wing,  
Came flying. *Id. Paradise Lost.*

We observe the horse's patient service at the plough, his speed upon the highway, his docility, and desire of glory. *More.*

Ships heretofore in seas like fishes sped,  
The mightiest still upon the smallest fed. *Waller.*

With all his harness soon the god was sped;  
His flying hat, his wings upon his heels. *Dryden.*

With a speeding thrust his heart he found;  
The lukewarm blood came rushing thro' the wound. *Id.*

Lucina  
Reached her midwife hands to speed the throes. *Id.*

Send speedily to Bertran; charge him strictly  
Not to proceed. *Id. Spanish Fryar.*

Let it be enough what thou hast done. *Id.*

When spotted deaths ran armed through every street,  
With poisoned darts, which not the good could shun.

The *speedy* could outfly, or valiant meet. *Dryden.*

These were violators of the first temple; and those that profaned and abused the second, sped no better. *South.*

Judicial acts are all those writings and matters which relate to judicial proceedings, and are sped in open court at the instance of one or both of the parties. *Ayliffe's Parergon.*

A dire dilemma! either way I'm sped;  
If foes they write, if friends they read, me dead. *Pope.*

Speed the soft intercourse from soul to soul,  
And waft a sigh from Indus to the pole. *Id.*

See where Idwall speeds! a trusty soldier. *A. Philips.*

The wind blew as 'twad blawn its last;  
The rattling showers rose on the blast;  
The *speedy* gleams the darkness swallowed;  
Loud, deep, and lang, the thunder bellowed. *Burns.*

**SPEED** (John), an eminent English historian, born at Farington, in Cheshire, in 1542. He was by profession a tailor, and freeman of the company of merchant-tailors in London. In 1606 he published his *Theatre of Great Britain*, which was afterwards reprinted in folio under the title of the *Theatre of the Empire of Great Britaine*. His *Genealogies of Scripture* were first bound up with the Bible in 1611, when the first edition of the present translation was printed. In 1614 appeared his *History of Great Britaine*, which has been translated into Latin: and in 1616 he published his *Cloud of Witnesses*, in 8vo. He lived in marriage fifty-seven years with his wife, by whom he had twelve sons and six daughters; and died in 1629. He was interred in the church of St. Giles's, Cripplegate, London, where a monument was erected to his memory.

**SPEEDWELL**, *n. s.* Lat. *veronica*. Fluelin. A plant.

In a scarcity in Silesia a rumour was spread of its raining millet seed; but it was found to be only the seeds of the ivy-leaved *speedwell* or small henbit. *Derham's Physico-Theology.*

**SPEEDWELL**, in botany. See *VERONICA*.

**SPEEDWELL**, FEMALE, a species of *antirrhinum*.

**SPEIGHT'S Town**, a sea-port town of Barbadoes, on the north-west coast, formerly much frequented by the Bristol traders, and thence called Little Bristol. It contains a church, and four regular spacious streets, leading down to the shore. It has also two forts.

**SPEISS**, in metallurgy, an artificial metal compounded of cobalt, bismuth, and nickel. Sulphur and arsenic are sometimes added.

**SPELL**, *v. a., v. n. & n. s.* Sax. *rpel*, spellian, a word; Mæs. Goth. *spillan*, also means to divide, split: hence to spell is to divide and write a word with proper letters; to charm; form a word rightly; read: a charm consisting of some words of occult power.

Start not; her actions shall be holy:  
You hear my *spell* is lawful: do not shun her,  
Until you see her die again; for then  
You kill her double. *Shakspeare. Winter's Tale.*

I never yet saw man,  
How wise, how noble, young, how rarely featured,  
But she would *spell* him backward; if fair faced,  
She'd swear the gentleman should be her sister.

*Shakspeare.*

I have you fast:  
Unchain your spirits now with *spelling* charms,  
And try if they can gain your liberty.

*Id. Henry VI.*

Their toil is so extreme as they cannot endure it above four hours in a day, but are succeeded by *spells*: the residue of the time they wear out at coytes and kayles. *Carew.*

Thou durst not thus disparage glorious arms,  
Had not *spells*  
And black enchantments, some magician's art,  
Armed thee or charmed thee strong.

*Milton's Agonistes.*

Begin, begin; the mystic *spell* prepare. *Milton.*  
If I read aught in heaven,  
Or heaven write aught of fate, by what the stars,  
Voluminous or single characters,  
In their conjunction met, give me to *spell*,  
Sorrows and labours, opposition, hate,  
Attend thee. *Id. Paradise Lost.*

When gowns, not arms, repelled  
The fierce Epirote, and the African bold,  
Whether to settle peace, or to unfold  
The drift of hollow states, hard to be *spelled*. *Milton.*

Some have delivered the polity of spirits, that they stand in awe of charms, *spells*, and conjurations, letters, characters, notes, and dashes. *Browne's Vulgar Errors.*

Youself you so excel,  
When you vouchsafe to breathe my thought,  
That, like a spirit, with this *spell*  
Of my own teaching I am caught. *Walter.*

Mild Lucina

Then reached her midwife hands to speed the throes,  
And spoke the powerful *spells* that babes to birth disclose. *Dryden.*

In the criticism of *spelling*, the word satire ought to be with *i*, and not with *y*; and if this be so, then it is false *spelled* throughout. *Id. Juvenal, Dedication.*

This, gathered in the planetary hour,  
With noxious weeds, and *spelled* with words of power,  
Dire stepdames in the magic bowl infuse. *Dryden.*

By pasting on the vowels and consonants on the sides of four dice, he has made this a play for his children, whereby his eldest son in coats has played himself into *spelling*. *Locke.*

The Latin being written of the same character with the mother tongue, by the assistance of a *spelling* book it is legible. *Spectator.*

As to his understanding, they bring him in void of all notion; a rude unwritten blank, sent into the world only to read and *spell* out a God in the works of creation. *South.*

Another cause which hath maimed our language is a foolish opinion that we ought to *spell* exactly as we speak. *Swif.*

**SPELLING**, in grammar, that part of orthography which teaches the true manner of resolving words into their syllables. All words are either simple or compound, as *use*, *disuse*; *done*, *undone*; and the rules for dividing each must be such as are derived from the analogy of language in general, or from the established custom of speaking. See **ORTHOGRAPHY** and **PRONUNCIATION**.

**SPELMAN** (Sir Henry), an eminent English antiquarian, descended from an ancient family, and born at Cengham, near Lynn, in Norfolk, about 1561. He was knighted by king James I. who esteemed him on account of his service in discovering the oppressions of exacted fees in the courts, civil and ecclesiastical, and he employed him three times in Ireland on public affairs. When he was about fifty years of age, he went to reside in London; where, following the bent of his genius, he collected all books and MSS. on antiquities, foreign and domestic. In 1613 he published his book *De non Temerandis Ecclesiis*; i. e. against the profanation of churches. In 1626 he published the first part of his well known *Glossary*, which he never carried beyond the letter L; because, as some say, he had said things under *Magna Charta*, and *Maximum consilium*, that would have given offence. Upon his death all his papers came into the hands of his son Sir John Spelman, a gentleman who had abilities to have completed his father's design, if death had not prevented him. The second part was afterwards published by Sir William Dugdale, but unfinished. The next work was an edition of the English Councils, of which he published the first volume about two years before his death, leaving the second to be published by Sir William Dugdale. Sir Henry wrote several other works on ancient laws and customs, and died in 1641. His posthumous works were published in folio, 1698, under the care of Mr. Gibson, afterwards bishop of London.

**SPELMAN** (Sir John), eldest son of Sir Henry, was also a very learned man, and was knighted and appointed master of Sutton's Hospital, by Charles I., and during the civil war was a member of his privy council. He published, 1. The *Life of king Alfred the Great*; which was reprinted at Oxford, in 1709, 8vo. 2. The *Saxon Psalter*; in 1614, 4to. from an old MS. 3. A view of a pretended book, entitled *Observations of his Majesty's late answers and Epistles*; Oxford, 1642, 4to. 4. The *Case of our Affairs in Law, Religion, &c.*, briefly examined, 1643, 4to. He died 25th of July, 1643.

**SPELMAN** (Clement), youngest son of Sir John, was also very learned, became a counsellor at law, and was appointed Puisne Baron of Exchequer, upon the restoration. He published some tracts on Government; and a large preface to his father's work *De non Temerandis Ecclesiis*. He died at London, in June 1679.

**SPELT**, *v. n.* Sax. *spellian*. To split; break. A bad or rather an obsolete word. See above.

Feed geese with oats, *spelted* beans, barley meal, or ground malt mixed with beer.

*Mortimer's Husbandry.*

**SPELTER**, *n. s.* Teut. *spelte*. A kind of semi-metal.

Metals in fusion do not flame, for want of a copious fume; except *spelter*, which fumes copiously, and thereby flames. *Newton.*

**SPELTER**, in metallurgy, the same with zinc.

**SPENCE** (Joseph), was fellow of New College, Oxford, where he took the degree of A. M. in 1727. About that time he became first known as an author, by an *Essay on Pope's Odyssey*, in

which some particular beauties and blemishes of that work are considered; a work of great merit, and which, for sound criticism and candid disquisition, is almost without parallel. He was elected professor of poetry by the university in 1728, and held that office ten years. His *History of Stephen Duck* was first published in 1731; but it was afterwards much altered, and prefixed to an edition of Duck's poems. About this time he travelled into Italy as tutor to the earl of Lincoln, afterwards duke of Newcastle. In 1736 he republished *Gorboduc*, at Mr. Pope's desire, with a preface giving an account of the author, the earl of Dorset. In 1742 he was presented by the Society of New College to the rectory of Great Harwood, in Buckinghamshire. He never resided in his living; but paid it an annual visit, distributing large sums of money among the poor, and providing for many of their children. The same year he was made professor of modern history at Oxford. In 1747 he published *Polymetis*; or an enquiry concerning the agreement between the works of the Roman poets and the remains of ancient artists, being an attempt to illustrate them mutually from each other. This work was treated by Gray with a contempt which it did not deserve. He objects that the author did not illustrate his subject from Greek writers; that is, he failed to execute what he never undertook. He was installed prebendary of the seventh stall at Durham, the 24th May, 1754; when he published, *An Account of the Life, Character, and Poems, of Mr. Blacklock*, student of philosophy at Edinburgh; which was afterwards prefixed to his poems. The prose pieces which he printed in the museum he collected and published, with some others, in a pamphlet called *Moralities*, by Sir Harry Beaumont. Under the same name he published *Crito*, or a Dialogue on Beauty, and A particular Account of the Emperor of China's Gardens near Pekin, in a letter from F. Attiret, a French missionary now employed by that emperor to paint the apartments in those gardens, to his friend at Paris. Both these treatises are printed in Dodsley's fugitive pieces, as is also *A Letter from a Swiss Officer to his friend at Rome*; which Mr. Spence first published in the Museum. In 1758 he published *A Parallel*, in the Manner of Plutarch, between a most celebrated man of Florence and one scarcely ever heard of in England. This was also inserted in the fugitive pieces. The same year he made a journey into Scotland, which he described in an affectionate letter to Mr. Shenstone, published in Hall's Collection of Letters, 1778. In 1764 he was very well described by Mr. James Ridley, in his admirable Tales of the Genii, under the name of Phesoi Ecneps (his name spelt backwards), derive of the groves. A letter from Mr. Spence to that ingenious moralist, under the same signature, is preserved in the third volume of Letters of Eminent Persons. In 1768 he published Remarks and Dissertations on Virgil, with some other classical observations by the late Mr. Holdsworth. On the 20th of August the same year he was unfortunately drowned in a canal in his garden at Byfleet in Surry. He was found flat upon his face at the edge of the canal, where

the water was so shallow as not even to cover his head. The accident, it was supposed, for he was quite alone, was owing to a fit. The duke of Newcastle possesses some MS. volumes of anecdotes collected by Mr. Spence, from which Dr. Johnson was permitted to insert many extracts in his Lives of the Poets. In 1819 appeared Observations, Anecdotes and Characters of Books and Men, collected from the conversation of Mr. Pope, and of other eminent persons of his time, from a MS. of Mr. Spence, with his life, &c., by S. W. Singer, 8vo.

SPENCE (William), M. D., of Fairnieshirst, in Fifeshire, a late eminent Scottish physician and surgeon; who, after the usual course of study, and having been some years abroad, settled in Dumfermline, where he had great practice. But afterwards, taking a fancy to gardening, he spent great part of the money he had gained by his practice upon improvements, which turned out more ornamental than profitable. He is memorable as a physician, for having been the first to introduce the use of the Peruvian bark with success, in malignant fevers and putrid diseases. He published some medical tracts, and was a man of a benevolent disposition. He had been married, and left three daughters. He died at Edinburgh, January 3d, 1802, aged seventy-eight.

SPENCE, a river of Ireland, in Down.

SPENCER (Dr. John), an eminent divine, born in Kent in 1630, and educated at Cambridge. He was chosen fellow of his college, and took his degree of D. D. in 1663. In 1667 he was chosen master of C. C. College, and preferred to the deanery of Ely in 1677. He died on the 20th of May 1695. His works are, 1. The Righteous Ruler; a sermon on Proverbs xxix. 2, preached June 28th 1660. 2. A Discourse concerning Prodigies, wherein the vanity of presages by them is reprehended, and their true and proper ends asserted and vindicated. To this excellent work was afterwards added, A Discourse concerning vulgar prophecies, wherein the vanity of receiving them as the certain indications of any future event is exposed; and some marks of distinction between true and pretended prophets are laid down. 3. A Latin Dissertation concerning Urim and Thummim. 4. His famous treatise De Legibus Hebraeorum Ritualibus, Earum Rationibus. The intention of this book, as he informs us himself, was to vindicate the deity from the imputation of acting from arbitrary and fantastical motives. It has been highly and justly esteemed both for the elegance of style and the uncommon erudition and sound sense which it displays.

SPENCER (William), a learned English writer, who was fellow of Trinity College, Cambridge. In 1658 he published, at the University's press, Origen's Philocalia, and his eight books against Celsus; with a corrected Latin translation and notes of his own, in 4to.

SPEND, v. a. & v. n. } Sax. spenban; Ital.  
SPEND'ER, n. s. } spendere. To consume;

SPEND'THIFT. } exhaust; waste; effuse; make expense; prove by use: the noun substantive corresponding: a spendthrift is a lavish spender; a prodigal.

They spend their days in wealth, and in a moment go down to the grave. *Job xxi. 13.*

There is oil in the dwelling of the wise, but a foolish man spendeth it up. *Prov. xxi. 20.*

Wherefore do ye spend money for that which is not bread? *Isaiah lv. 2.*

I will very gladly spend and be spent for you. *2 Cor. xii. 15.*

He spends his life with his wife, and rememb'reth neither father nor mother. *1 Esdras, iv. 21.*

In those pastoral pastimes a great many days were spent, to follow their flying predecessors. *Sidney.*

Nothing but only the hope of spoil did relieve them, having scarce clothes to cover their nakedness, and their bodies spent with long labour and thirst. *Knolles's History of the Turks.*

Our cannons' malice vainly shall be spent  
Against the invulnerable clouds. *Shakspeare.*

When we can intreat an hour to serve,  
Would spend it in some words upon that business,  
If you would grant the same. *Id. Macbeth.*

The sound spendeth, and is dissipated in the open air; but in such concaves it is conserved and contracted. *Bacon.*

On mountains, it may be, many dews fall, that spend before they come to the valleys. *Id.*

There have been cups and an image of Jupiter made of wild vines; for the vines that they use for wine are so often cut, that their sap spendeth into the grapes. *Id.*

Say, for you saw us, ye immortal lights!  
How oft unweared have we spent the nights,  
Till the Ledaean stars, so famed for love,  
Wondered at us from above. *Cowley.*

Let not your recreations be lavish spenders of your time; but healthful, short, and apt to refresh you. *Taylor.*

We must exasperate  
The almighty Victor to spend all his rage. *Milton.*

Eleutherius, perceiving that he was unwilling to spend any more time upon the debate, thought not fit to make any mention to him of the proposed opposition. *Boyle.*

Butter spent as if it came from the richer soil. *Temple.*

They bend their bows, they whirl their slings around;  
Heaps of spent arrows fall, and strew the ground. *Dryden.*

Or come your shipping in your ports to lay,  
Spent and disabled in so long a way! *Id. Aeneid.*

Henceforth your tongue must spend at lesser rate,  
Than in its flames to wrap a nation's fate. *Dryden.*

Some fawning usurer does feed  
With present sums the unwary spendthrift's need. *Id.*

Bitter cold weather starved both the bird and the spendthrift. *L'Estrange.*

Money is brought into England by nothing but spending here less of foreign commodities than what we carry to market can pay for. *Locke.*

Most men, like spendthrift heirs, judge a little in hand better than a great deal to come. *Id.*

The waves ascended and descended, till, their violence being spent by degrees, they settled at last. *Burnet's Theory of the Earth.*

He spends as a person who knows that he must come to a reckoning. *South.*

Thou oft hast seen me

Wrestling with vice and faction; now thou see'st  
me

Spent, overpowered, despairing of success.

*Paulus n. Cato.*

The whole of our reflections terminate in this, what course we are to take to pass our time; some to get, and others to *spend*, their estates. *Wake.*

When he was of riper years, for his farther accomplishments, he spent a considerable part of his time in travelling. *Pope.*

The son, bred in sloth, becomes a spendthrift, a profligate, and goes out of the world a beggar. *Swift.*

A woman of fortune, being used to the handling of money, spends it judiciously: but a woman who gets the command of money for the first time upon her marriage, has such a gust in spending it, that she throws it away with great profusion. *Johson.*

**SPENDIUS**, a Campanian deserter, who rebelled against the Romans, raised tumults, and joined the Carthaginians; and afterwards, deserting from the Carthaginians, carried on war for some time against Hamilcar, in that desperate warfare, called from its horrors the inexpiable war. He was at last crucified by Hamilcar, with nine of the other ringleaders. See *CARTHAGE*.

**SPENER** (Philip James), a celebrated Lutheran divine, born in Alsace, about 1635. Wishing to revive vital religion, in opposition to formality on the one hand and infidelity on the other, he became the founder of a new sect called Pietists. See *PIETISTS*. But though his intentions seem to have been upright, and his sentiments pure, he and his followers met with much opposition, and were both calumniated and persecuted. He published several tracts on practical theology, and died at Berlin in 1705.

**SPENSER** (Edmund), the poet, was born in London in 1553, and descended from an ancient family of the Spensers in Northamptonshire. He was admitted a sizar of Pembroke Hall in Cambridge, and matriculated in 1569. At this time began his intimacy with Mr. Gabriel Harvey, a man of genius and a poet. In 1576, having completed his degrees in arts, he left the university, as it is said, for want of subsistence, and retired to the north of England. Here he had the misfortune to become enamoured of his Rosalind, who, after flattering his passion for a time, at length preferred his happier rival. Spenser continued in the country till 1578, when at the persuasion of his friend Mr. Harvey he removed to London, where that gentleman introduced him to Mr. Sidney, afterwards Sir Philip. Concerning his first introduction to Sir Philip, there is indeed a different story, which was first told by the writer of his life, prefixed to his works in 1679, and transcribed by Hughes, Cibber, and several others; which, nevertheless, is doubted. It is, that Spenser, being unknown to this Meccanas of the age, went to Leicester House, and sent in the ninth canto of the first book of the *Fairy Queen*; that, on reading part of it, Sir Philip ordered his steward to give the bearer £50; on reading a little farther £50 more; then £200, bidding him to make haste and pay the money, lest he should give the poet his whole estate. The story tells prettily enough; but the *Fairy Queen* was begun long after his acquaintance with Sir Philip. By this universal patron of genius, however, he was presented to queen Elizabeth, who honored him with the place of poet laureat. About this time he finished his

Shepherd's Calendar, which was first printed in 1579; and in 1580, being recommended by his patron to the earl of Leicester, he went to Ireland as secretary to the lord Grey of Wilton, then appointed lord-lieutenant of that kingdom. Lord Grey was recalled in 1582, and with him Spenser returned to London, where he continued till after the death of Sir Philip Sidney in 1586; a loss which he bewailed to the end of his life. In 1587, having obtained a royal grant of 3000 acres of forfeited lands in the county of Cork in Ireland, he set out for that kingdom, took possession of his estate, and fixed his residence in the castle of Kilcolman, which had belonged to the earl of Desmond. In this retirement he resumed his great work of the *Fairy Queen*; and continued in Ireland till, being visited by his old friend Sir Walter Raleigh in 1589, he came over with him to England, but returned to Ireland in 1590; where he fell in love with a country girl, and married her. Soon after his marriage, he paid another visit to his native country, where we also find him in 1596. In 1597 he returned once more to Kilcolman; but on the rebellion of lord Tyrone, who ravaged the whole county of Cork, he was obliged to fly for safety with his family to England, where, in 1599, he died in extreme poverty, according to Camden; but Mr. Malone has discovered from the patent roll, 33 Eliz. p. 3, that in February 1590-1, Spenser obtained from Elizabeth an annuity of £50 during life; which was then equal to the value of £200 at present. He was buried in Westminster Abbey, according to his request, near Chaucer. A monument was erected to his memory by Ann countess of Dorset. We know but little of his character as a man; as a poet, considering the age in which he lived, he deserves our utmost veneration. He wrote various pieces besides those above-mentioned. His whole works, with his life by Hughes, were published in six volumes, 12mo., in 1715 and 1750.

**SPENSER**, or **SPENCER**, in dress, a kind of half modern coat, that covers the body and arms, but reaches no farther down than the middle: so named from earl Spenser, who first introduced the fashion, it is said, in consequence of a wager, that he should start the most ridiculous piece of dress, that had yet been invented, and that in three months it should be generally followed by people of rank. He did so and gained his bet.

**SPENSER**, MARINE, a recent invention for preserving lives at sea, in cases of shipwreck, so named from the above piece of dress. It consists of 800 bottle corks, strung together upon a strong wire, and covered with a piece of canvas six inches broad, and oiled to exclude the water. It is made to fit the body, round the back and breast; and, when used, is brought up over the feet and legs, up to the arm pits, and fastened over the shoulders with straps or bandages. A person thus equipped cannot possibly sink; and by the motion of his arms and legs may easily make his way to the nearest shore.

**SPEARABLE**, *adj.* Lat. *sperabilis*. Such as may be hoped. Not in use. We may cast it away, if it be found but a bladder,

and discharge it of so much as is vain and not *spermeable*.  
*Bacon.*

**SPERGULA**, spurrey, in botany, a genus of plants belonging to the class of decandria; and the order of pentagynia; natural order twenty-second, caryophylleæ: CAL. pentaphylloous; the petals five, and undivided: CAPS. oval, unilocular, and containing five valves. There are five species, all of which are British; viz. 1. S. arvensis, corn-spurrey, has linear furrowed leaves, from eight to twenty in a whirl. The flowers are small, white, and terminal. It is frequent in corn fields. In Holland it is cultivated as food for cattle, and has the advantage of growing on the very poorest soils; but does not afford a great deal of food. Poultry are fond of the seeds; and the inhabitants of Finland and Norway make bread of them when their crops of corn fail. Horses, sheep, goats, and swine, eat it. Cows refuse it.

2. S. laricina, larch-leaved spurrey. Several stalks arise from one root, from an inch to an inch and a half high; the leaves are linear, subulate, and acuminated, somewhat hairy on the edges, and their points turned to one side of the stalk. The petals are white, and about the length of the calyx. Lightfoot found this species on a hill in the Isle of Bute. He is doubtful whether the sagina procumbens, var.  $\beta$  of Linnaeus, be not the same plant with this. It flowers in July.

3. S. nodosa, knotted spurrey. Several stalks arise from one root, sometimes reclining and sometimes erect, and from three to five inches high. The leaves are smooth, of a fine green, narrow, pointed, and opposite. The flowers are white, terminal, and yellow antheræ.

4. S. pentandra, small spurrey. The leaves are very narrow, and grow in whorls at the joints. The seeds are black, with a white circle. It flowers in July.

5. S. saginoides, pearlwort spurrey, has smooth, linear, opposite leaves; the peduncles are solitary and very long. Aiton says it is a native of England, and flowers from June to August.

**SPERLING** (Otto), a German physician, born at Hamburg, in 1602. He studied physic in Italy, and afterwards settled at Bergen in Norway. In 1638 he was appointed physician to Christian IV., king of Denmark; but, being afterwards concerned in count Ulfeld's conspiracy, he was put in prison, where he died in 1681, aged seventy-nine. He published A Catalogue of the Plants in Denmark, and some works on Medals and Antiquities.

**SPERM**, n. s.

**SPERMAT'IC**, adj.

**SPERMAT'ICAL**,

**SPERMATIZE**, v. n. *ined*: spermatic or spermatical is seminal, consisting of seed: to spermatise, to yield seed.

Some creatures bring forth many young ones at a burthen, and some but one: this may be caused by the quantity of *sperm* required, or by the partitions of the womb which may sever the *sperm*.  
*Bacon.*

The moisture of the body, which did before irrigate the parts, is drawn down to the *spermatical* vessels.  
*Id.*

Aristotle affirming that women do not *spermatize*,

and confer a receptacle, rather than **essential principles** of generation, deductively includes both sexes in mankind.  
*Browne.*

The primordials of the world are not mechanical, but *spermatical* or vital.  
*More's Dialogues.*

Metals and sundry meteors rude shapes have no need of any particular principle of life, or *spermatical* form, distinct from the rest or motion of the particles of the matter.  
*More.*

There is required to the preparation of the *sperm* of animals a great apparatus of vessels, many secretions, concoctions, reflections, and circulations.  
*Ray.*

Two different sexes must concur to their generation; there is both a great apparatus of *spermatick* vessels, wherein the more spirituous part of the blood is by many digestions and circulations exalted into sperm.  
*Id. on Creation.*

**SPERMACETI**, n. s. Lat. Often pronounced corruptedly *parmasity*. Defined in the extract.

A particular sort of whale affords the oil whence this is made; and that is very improperly called *sperma*, because it is only the oil which comes from the head of which it can be made. It is changed from what it is naturally, the oil itself being very brown and rank. The peculiar property of it is, to shoot into flakes, not much unlike the crystallization of salts; but in this state 'tis yellow, and has a certain rankness, from which it is freed by squeezing it between warm metalline plates: at length it becomes perfectly pure, inodorous, flaky, smooth, white, and in some measure transparent.  
*Quincy.*

**SPERMACETI**, a whitish, unctuous, flaky substance, prepared from oil, but chiefly from the brains of a species of whale called physete macrocephalus. The method of preparing spermaceti is kept a secret; but the process is said to be this:—The brains, being taken out of the animal, are then, as some say, melted over a gentle fire, poured into moulds, and when cold melted again; and this process is continued till they are purified. Others say that, after being pressed and drained, they are more thoroughly purified by steeping them in a ley of alkaline salt and quicklime. The brains are then washed, and cut into thin flakes or slices with wooden knives. One fish is said to afford some tons of brains. Good spermaceti is glossy and semitransparent, in fine white flakes; soft and unctuous to the touch, yet dry and friable; in taste somewhat like butter, and of a faint smell like that of tallow. Some adulterate it with wax; but the deceit is discovered, either by the smell of the wax or by the dulness of the color. Some also sell a preparation of oil taken from the tail of the whale instead of that from the brain; but this kind turns yellow as soon as exposed to the air. Indeed it is apt in general to grow yellowish, and to contract a rancid fishy smell if not carefully secured from the air. The more perfectly it has been purified at first the less susceptible it is of these alterations; and, after it has been changed, it may be rendered white and sweet again by steeping it afresh in ley of alkaline salt, and congeals again as it cools. Spermaceti is of use in medicine. Quincy says it is a noble remedy in the asthma, &c., though chiefly used in bruises, inward hurts, and after delivery. For internal use it may be dissolved in aqueous liquors into the form of an emulsion, by trituration with al-

monds, the yolk or white of an egg, and more elegantly by mucilages; or made into a lochoch by mixing two drachms of it with a suitable quantity of yolk of egg, then adding half an ounce of fresh drawn oil of almonds, and an ounce of balsamic syrup. Spermaceti is not capable of being dissolved by caustic alkalis, and of forming soaps like other oily matters; but it is altogether soluble in oils, and unites by liquefaction with wax and resins; and in these forms is applied externally. But it is certain its greatest property, and that which makes it so much in vogue in many places, is its softening the skin. Whence it comes to be used by the ladies in pastes, washes, &c. A method has been invented by Mr. Smith Gibbes of Magdalen College, Oxford, to convert animal muscle into a substance much resembling spermaceti. The process is simple: nothing more is necessary than to take a dead carcase and expose it to a stream of running water; it will in a short time be changed to a mass of fatty matter. To remove the offensive smell a quantity of nitrous acid may then be poured upon it, which, uniting with the fetid matter, the fat is separated in a pure state. This acid indeed turns it yellow, but it may be rendered white and pure by the action of the oxygenated muriatic acid. Mr. Gibbes brought about the same change in a much shorter time. He took three lean pieces of mutton, and poured on them the three mineral acids, and he perceived that at the end of three days each was much altered; that in the nitrous acid was much softened, and on separating the acid from it he found it to be exactly the same with that which he had before got from the water; that in the muriatic acid was not in that time so much altered; the vitriolic acid had turned the other black.

**SPERMACETI CANDLES** are of modern manufacture: they are made smooth, with a fine gloss, free from rings and scars, superior to the finest wax candles in color and lustre, and, when genuine, leave no spot or stain on the finest silk, cloth, or linen.

**SPERMACOCE**, button wood, in botany, a genus of the monogynia order, and tetrandria class of plants; natural order forty-seventh, stellatae: cor. monopetalous and funnel-shaped, and there are two bidentate seeds. The species are eight, viz. 1. S. articulare; 2. hirta; 3. hispida; 4. procumbens; 5. spinosa; 6. stricta; 7. tenuior; and 8, verticillata.

**SPERONE** (Speron), an ingenious Italian writer, born of a noble family at Padua in 1500. He made so rapid a progress in his studies that, at twenty, he was chosen first professor of logic in the university of Padua, and in 1528 was raised to that of philosophy. He was knighted by pope Pius IV. He was one of the greatest orators of his age; was well skilled in law, theology, history, &c., and was much employed in public affairs at France, Spain, Rome, and Venice. His works are all in Italian, and consist of orations, dissertations, dialogues, letters, and a tragedy. He died at Padua, in 1588, aged eighty-eight.

**SPERSE**, *v. a.* Lat. *spersus*. To disperse; scatter. Disused.

The wrathful wind,

Which blows cold storms, burst out of Scythian mew,

That *spersit* those clouds, and in so short as thought This dreadful shape was vanished to nought.

Spenser.

He making speedy way through *spersed* air,  
And through the world of waters wide and deep,  
To Morpheus' house doth hastily repair.

Faerie Queene.

**SPET**, *v. a.* Goth. *spatan*, to SPEW, which see. Spet, in Scotland, is a superabundance of water: to bring or pour abundantly.

Mysterious dame,  
That ne'er art called but when the dragon womb  
Of Stygian darkness *spets* her thickest gloom,  
And makes one blot of all the air,  
Stop thy cloudy ebon chait.

Milton.

**SPEUSIPPUS**, an Athenian philosopher, the son of Eurymedon and Potone, the nephew and successor of Plato. Contrary to the practice of Plato Speusippus required from his pupils a stated gratuity. He placed statues of the graces in the school which Plato had built. On account of his infirm state of health he was commonly carried to and from the academy in a vehicle. On his way thither he one day met Diogenes, and saluted him; the surly philosopher refused to return the salute, and told him that such a feeble wretch ought to be ashamed to live; to which Speusippus replied that he lived not in his limbs but in his mind. At length, being wholly incapacitated by a paralytic stroke for the duties of the chair, he resigned it to Xenocrates. He is said to have been of a violent temper, fond of pleasure, and exceedingly avaricious. Speusippus wrote many philosophical works, which are now lost, but which Aristotle thought sufficiently valuable to purchase at the expense of three talents. From the few fragments which remain of his philosophy, it appears that he adhered very strictly to the doctrine of his master.

**SPEW**, *v. a.* & *v. n.* { Sax. *spēpan*; Belgic  
SPEW'Y, *adj.* { *speuwen*; Goth. *spatan*.  
To vomit; eject from the stomach; ease the stomach by vomiting: spewy is a provincialism for wet, foggy.

Keep my statutes, and commit not any of these abominations, that the land *spew* not you out.

Lev. xviii. 28.

A swordfish small him from the rest did sunder,  
That in his throat him pricking softly under,

His wide abyss, him forced him forth to *spew*,  
That all the sea did roar like heaven's thunder,

And all the waves were stained with filthy hue.

Spenser.

Contentious suits ought to be *spewed* out, as the surfeit of courts.

Bacon's Essays.

He could have hauled in  
The drunkards, and the noises of the inn:  
But better 'twas that they should sleep or *spew*,  
Than in the scene to offend or him or you.

Ben Jonson.

When earth with slime and mud is covered o'er  
Or hollow places *spew* their watery store.

Dryden's Georgicks.

When yellow sands are sifted from below,  
The glittering billows give a golden show;  
And, when the fouler bottom *spews* the black,  
The Stygian dye the tainted waters take. Dryden.

The lower vallies in wet winters are so spewy that they know not how to feed them.

Mortimer's Husbandry.

**SPEY**, a large and rapid river of Scotland, in Inverness-shire, which rises above the lake so named, in Badenoch, and after a serpentine course of seventy Scots, or 120 English miles, passes by Rothes Castle, and falls into the German Sea at Garmouth, near Elgin. Upon this river floats of fir and birch wood are carried down to the Frith; the float is guided by a man sitting on a courach. This vessel is of an oval shape, about four feet long and three broad; a small keel from head to stern; a few ribs cross the keel, and a ring of pliable wood round the lip of it; the whole covered with the rough hide of an ox or horse. The rower sits on a transverse seat in the middle, and holds in his hand a rope, the end of which is tied to the float, and with his other hand he manages a paddle, keeps the float in deep water, and brings to shore when he pleases. The Spey, says Mr. Pennant, is a dangerous neighbour to Castle Gordon, overflowing frequently in a dreadful manner, as appears by its ravages far beyond its banks. The bed is wide and full of gravel, and the channel very shifting. In 1746 the duke of Cumberland passed this river at Belly Church, near Castle Gordon, when the channel was so deep as to take an officer, from whom Mr. Pennant had the account, and who was six feet four inches high, up to the breast. The banks are very high and steep; so that, had not the rebels been infatuated in such a manner as to neglect opposition, the passage must have been attended with considerable loss. On this river there is a salmon-fishery, in which about 2000 barrels are caught in the season.

**SPEY**, Locu, a large lake of Inverness-shire, in the district of Badenoch, which is, properly speaking, only a part of the above river, swelled out to the size of a large lake, a few miles below its source. It is therefore absurd to represent the river (as most geographers do) as arising out of this lake, for the river rises several miles above it, swells and fills it, and then runs on its course, as above described.

**SPEZIA**, GULF OF, the ancient Portus Lunæ, a bay of the Mediterranean, in the Genoese territory. Its length, from Porto Venere to the town of Spezia, is about five miles, and its breadth at the mouth nearly the same: it is defended from the agitation of the sea by several small islands, and sheltered, on the land side, by mountains. To the naturalist it presents a very curious phenomenon. In the middle of the bay there rises, from the depth of thirty-eight feet, a spring of fresh water, which, having a strong current, occupies at the surface a space of several yards square.

**SPEZIA**, or **SPECCHIA**, a town of the Sardinian states, in the Genoese territory, standing on an eminence at the bottom of the gulf of Spezia. Since the advantages of its situation have been appreciated, this town has been rapidly increasing in population, and contains at present upwards of 4000 inhabitants. It is tolerably regular, and well built: the number of villas with plantations of olives and fruit trees, joined to its naturally picturesque situation, render the environs delightful. Eight miles W.N.W of Sarzana, and forty south-east of Genoa.

**SPHA'CELATE**, *v. a. & v. n.* { Fr. sphacèle;   
**SPHA'CELOS**, *n. s.* } Gr. σφάκελος. To affect with or suffer gangrene: gangrene; mortification.

It is the ground of inflammation, gangrene, *sphacelus*. *Wiseman.*

The long reteation of matter *sphacelates* the brain. *Sharp.*

The skin, by the great distention, having been rendered very thin, will, if not taken away, *sphacelate*, and the rest degenerate into a cancerous ulcer. *Id. Surgery.*

**SPHACELUS**, in surgery and medicine, is an absolute and perfect corruption or death of the parts.

**SPHACHIA**, a mountainous district of Candia, which is covered with snow during a great part of the year. It is inhabited by a tribe called Sphachites, said to be descended from the ancient Cretans, and who have been all along independent. They are an active and spirited race, deriving their chief subsistence from their herds and flocks, but engaging occasionally in piratical excursions. Their government is a kind of republic. They have a small town called Sphachia or Sfachia.

**SPHACTERIÆ**, **SPHAGIÆ**, or **SPHAGÆ**, in ancient geography, three islands and a cape of the Mediterranean, on the coast of Messenia, opposite Pylos, now called Sapienza. See **SAPIENZA**. The largest was famous for a victory obtained by the Athenians over the Spartans. They are now all included in the new republic of the Seven islands; in which, by the treaty of Amiens, in 1802, all the three rank but as one. See **SEVEN ISLANDS**.

**SPHERANTHUS**, in botany, the globe-flower, or globe-daisy, a genus of plants belonging to the class of syngenesia, and to the order of polygamia segregata; natural order forty-ninth, compositæ. Each partial calyx contains eight florets; the florets are tubulated, the female being scarcely distinguishable. The receptacle is scaly, and there is no pappus. The species are three, viz., 1. S. Africanus, 2. S. Chinensis, and 3. S. Indicus; which, as their trivial names import, are respectively natives of Africa, China, and the East Indies.

**SPHAGNUM**, bog-moss, in botany, a genus of plants belonging to the class of cryptogamia and order of musci. The antheræ are globose; the mouth entire and closed by an operculum; the calyptra is wanting. There are three species, viz., 1. S. alpinum, green bog-moss. Its branches are subulate and erect; the antheræ are oval. It grows in mountain bogs in South Britain. 2. S. arboreum, creeping bog-moss, is branched; the antheræ are numerous, sessile, hairy, and grow along the branches chiefly on one side. It is found on the trunks of trees. 3. S. palustre, common bog-moss, grows on our bogs in wide patches, so as often to cover a large portion of their surface. The stalks are from two inches to two feet long, irregularly surrounded with numerous conical pendant branches, and terminated with a rosaceous cluster of erect short ones. The roots and decayed stalks of this moss constitute a principal part of that useful bituminous substance called peat, which is the chief fuel of

the northern regions. See PEAT. The Lapland matrons are well acquainted with this moss. They dry and lay it in their cradle, to supply the place of bed, bolster, and every covering; and, being changed night and morning, it keeps the infant remarkably clean, dry, and warm. It is sufficiently soft of itself, but the tender mother, not satisfied with this, frequently covers the moss with the downy hairs of the rein-deer, and thus makes a most delicate nest for the young babe.

SPHENOIDES Os, the seventh bone of the cranium or skull. See ANATOMY, Index.

SPHERE, n. s. & v. a. { Fr. *sphère*; Lat. *sphera*. A globe; orb; orbicular body; orbit; province: to form into, or place in, a sphere: the adjectives and noun sub-

SPHER'IC, stantives following corresponding: a spheroid is a flattened globe or sphere: the adjective corresponding: sphrule, a diminutive of sphere.

What if within the moon's fair shining *sphere*,  
What if in every other star unseen,  
Of other worlds he happily should hear.

Faerie Queene.

To be called into a huge *sphere*, and not to be seen to move in't. Shakspeare. Antony and Cleopatra.

The glorious planet Sol,  
In noble eminence enthroned and *sphered*  
Midst the rest, whose med'cinal eye  
Corrects the ill aspects of planets' evil. Shakspeare.

We make guilty of our disasters the sun, the moon, and stars, as if we were villains by *spherical* predominance. Id.

What descent of waters could there be in a *spherical* and round body, wherein there is nor high nor low? Raleigh.

Though sounds spread round, so that there is an orb or *spherical area* of the sound, yet they go farthest in the forelines from the first local impulsion of the air. Bacon.

Of enemies he could not but contract good store, while moving in so high a *sphere*, and with so vigorous a lustre. King Charles.

Such bodies receive their figure and limits from such lets as hinder them from attaining to that *sphericalness* they aim at. Digby.

First the sun, a mighty *sphere* he trained. Milton.

Half unsung, but narrower bound  
Within the visible diurnal *sphere*. Id.

Light from her native east  
To journey through the airy gloom began,  
*Sphered* in a radiant cloud; for yet the sun  
Was not. Id. Paradise Lost.

By discernment of the moisture drawn up in vapours, we must know the reason of the *spherical* figures of the drops. Glanville.

And then mortal ears  
Had heard the musick of the *spheres*. Dryden.

Two figures on the sides embossed appear; Conon, and what's his name who made the *sphere*, And shewed the seasons of the sliding year. Id.

Every man, versed in any particular business, finds fault with these authors, so far as they treat of matters within his *sphere*. Addison's Freeholder.

A fluid mass necessarily falls into a *spherical* surface. Keil.

Where the central nodule was globular, the inner surface of the first crust would be *spheric*; and, if the crust was in all parts of the same thickness, that whole crust would be *spherical*. Woodward.

Water consists of small, smooth, spherical particles: their smoothness makes 'em slip easily upon one another; the *sphericity* keeps 'em from touching one another in more points than one. Cheyne's Philosophical Principles.

They are not solid particles, by the necessity they are under to change their figures into oblong *spheroids*, in the capillary vessels. Id.

Mercury is a collection of exceeding small, vastly heavy *spheres*. Id.

If these corpuscles be *spheroidal*, or oval, their shortest diameters must not be much greater than those of light. Cheyne.

Ye know the *spheres* and various tasks assigned By laws eternal to the aetherial kind. Pope.

The hermit's prayer permitted, not approved, Soon in an higher *sphere* Eulogius moved. Harte.

The wisdom of the ignorant somewhat resembles the instinct of animals; it is diffused but in a very narrow *sphere*, bent within the circle it acts with vigour, uniformity, and success. Goldsmith.

SPHERE is a solid contained under one uniform round surface, every point of which is equally distant from a certain point in the middle, called its centre; and is formed by the revolution of a semicircle about its diameter. See GEOMETRY.

SPHERE, in astronomy, that concave orb or expanse which invests our globe, and in which the heavenly bodies appear to be fixed, and at an equal distance from the eye. The better to determine the places of the heavenly bodies in the sphere, several circles are supposed to be described on the surface thereof, hence called the circles of the sphere: of these some are called great circles, as the equinoctial, ecliptic, meridian, &c., and others small circles, as the tropics, parallels, &c. See ASTRONOMY, Index, and GEOGRAPHY.

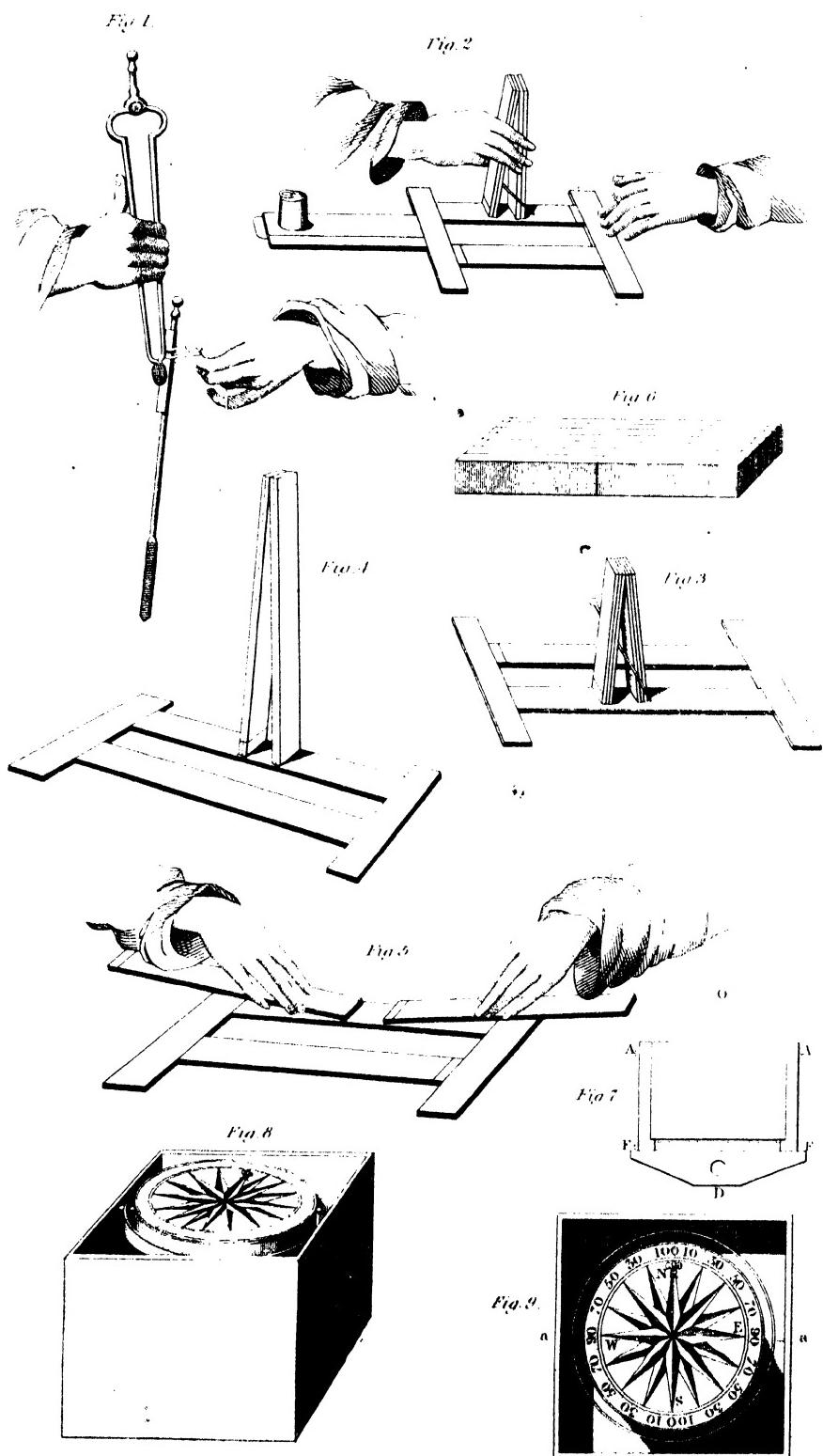
SPHERE, ARMILLARY. See GEOGRAPHY.

SPHERE OF ACTIVITY OF A BODY is that determinate space or extent to which, and no farther, the effluvia continually emitted from that body reach; and where they operate according to their nature.

SPHERE, PROJECTION OF THE. See PROJECTION.

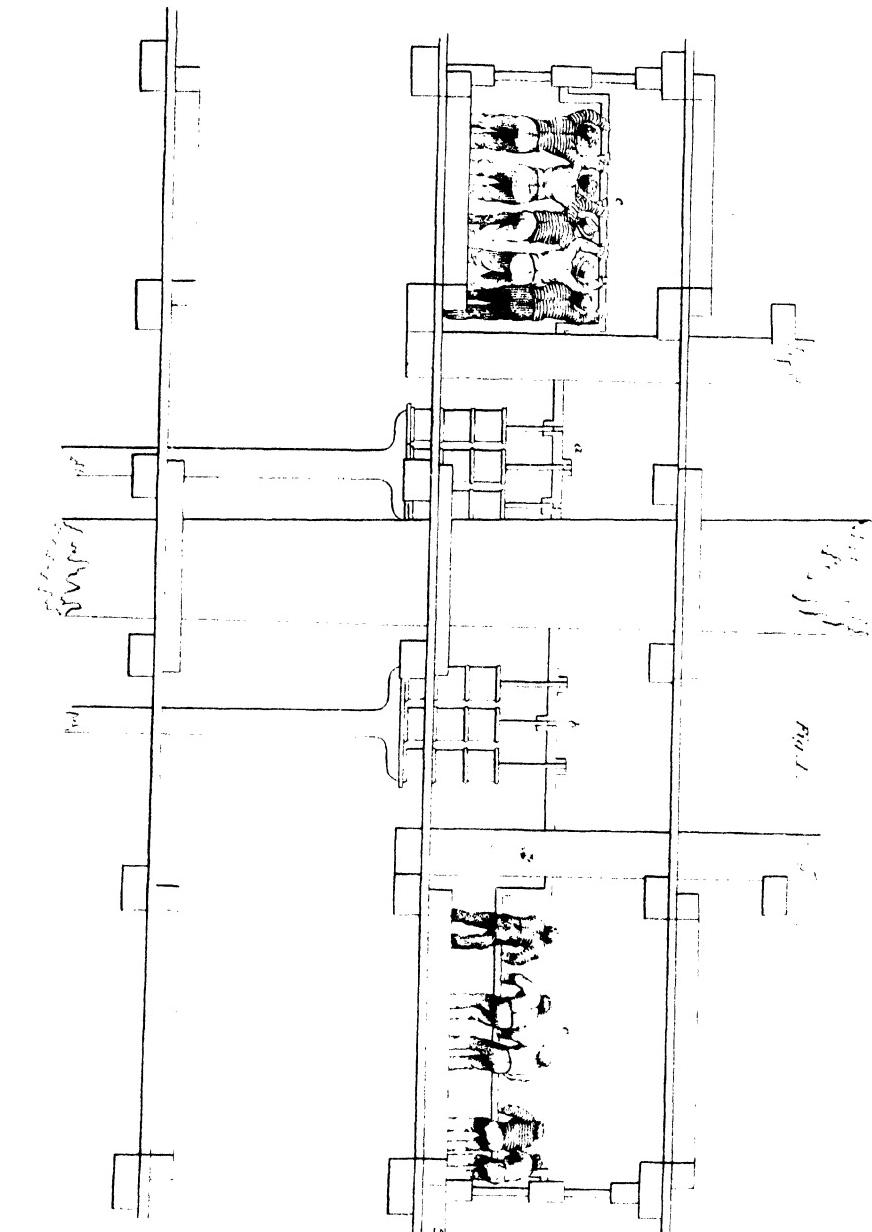
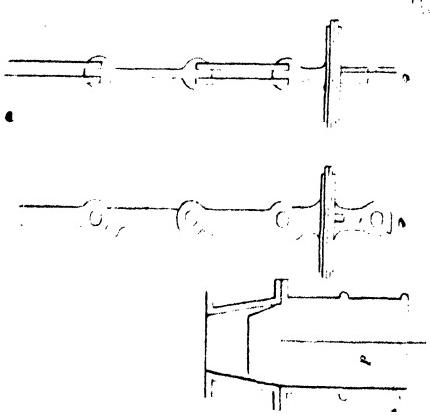
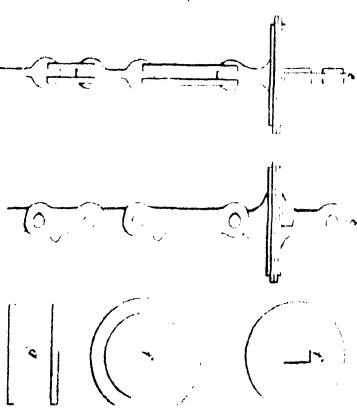
SPHERES, in optics, the same with metalline mirrors for telescopes or other purposes. See OPTICS.







*Fig. 2.*



*Fig. 1.*



CHEMISTRY.

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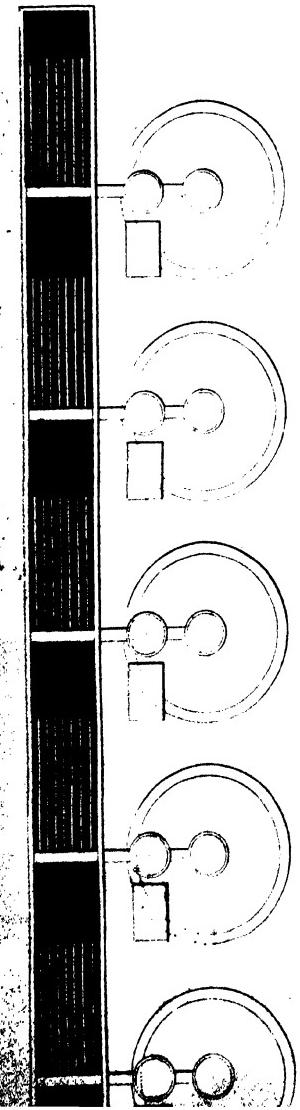


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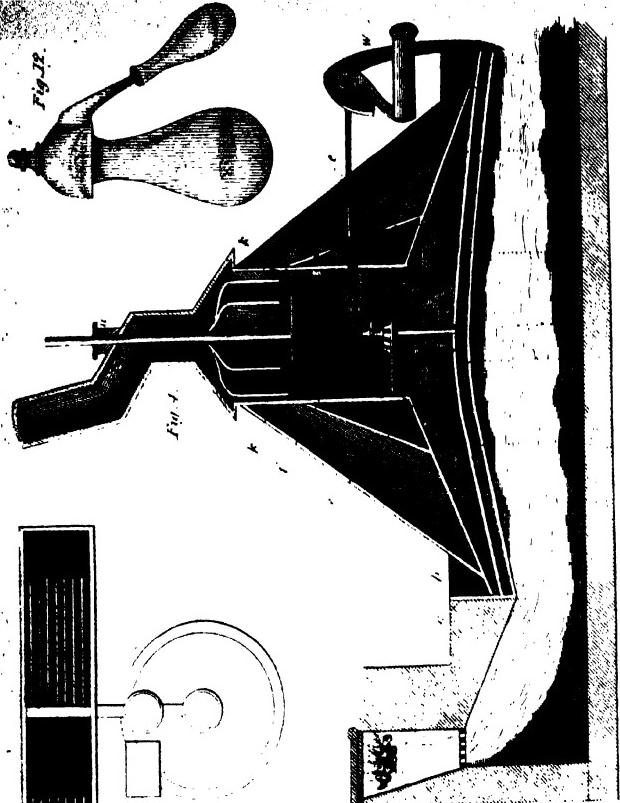


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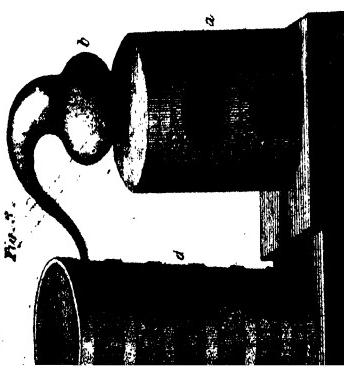


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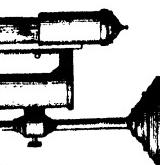


Fig. 4.



Fig. 5.



Fig. 6.



Fig. 7.



Fig. 8.



Fig. 9.

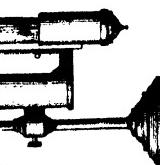


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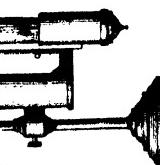


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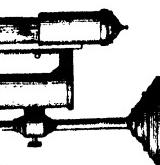


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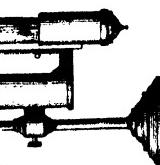


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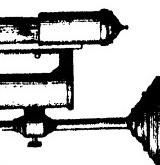


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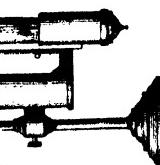


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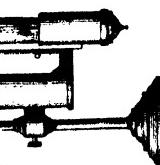


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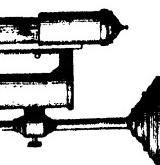


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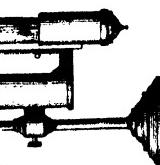


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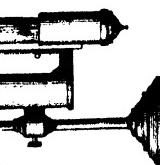


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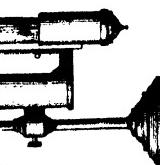


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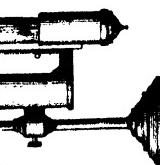


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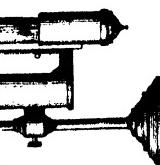


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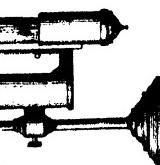


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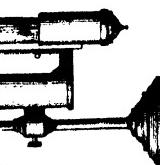


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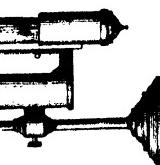


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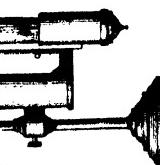


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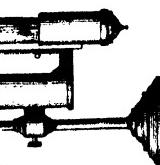


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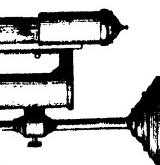


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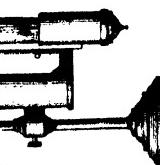


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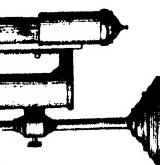


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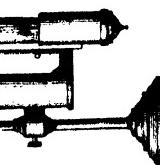


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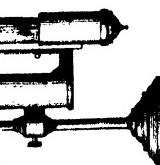


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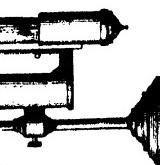


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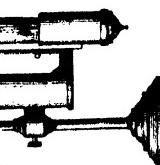


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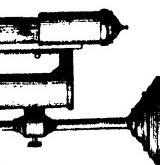


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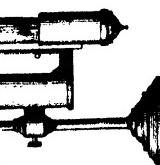


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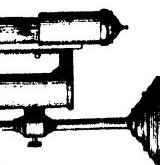


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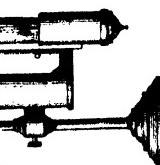


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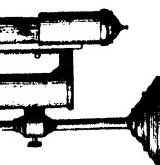


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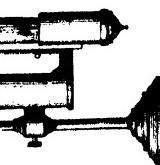


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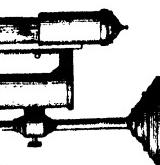


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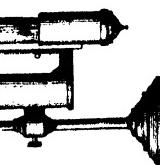


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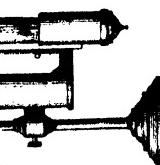


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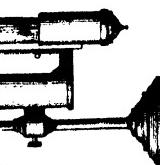


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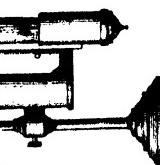


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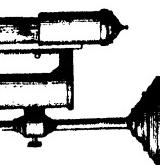


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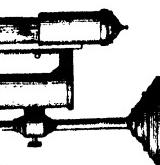


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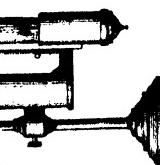


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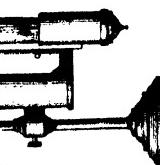


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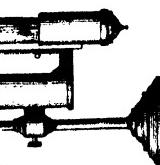


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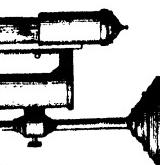


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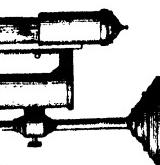


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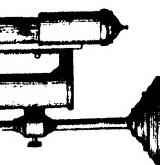


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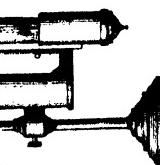


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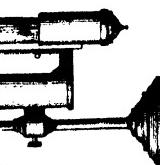


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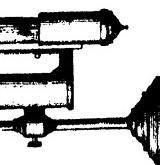


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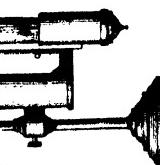


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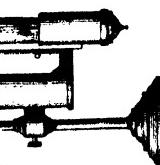


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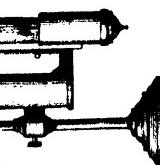


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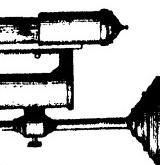


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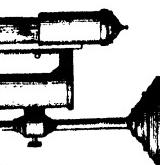


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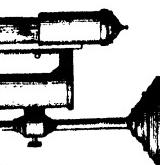


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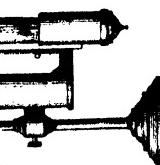


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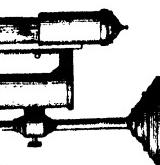


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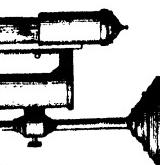


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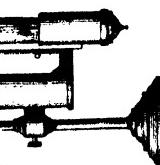


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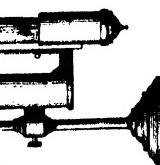


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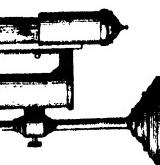


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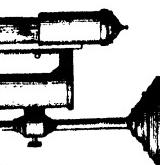


Fig. 69.

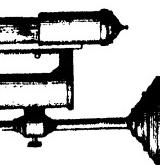


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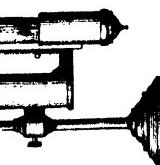


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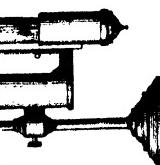


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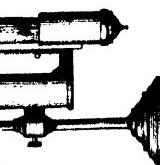


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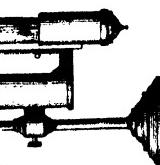


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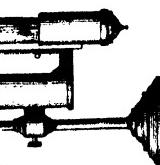


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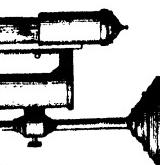


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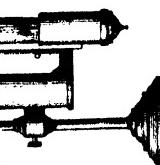


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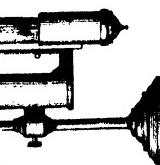


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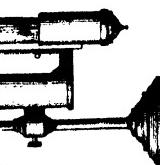


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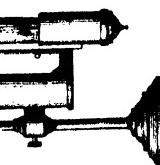


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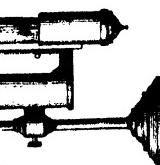


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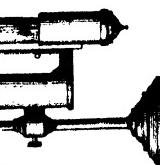


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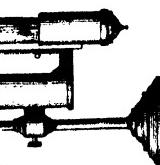


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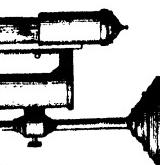


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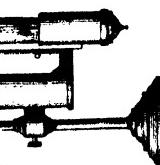


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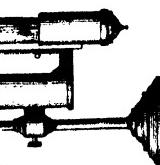


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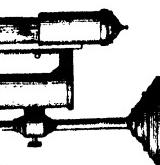


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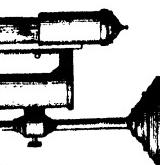


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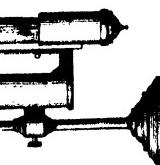


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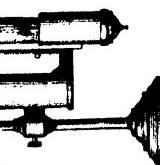


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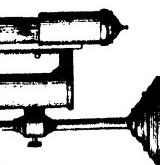


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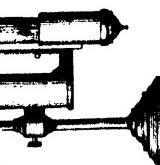


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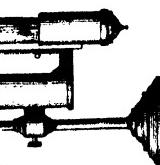


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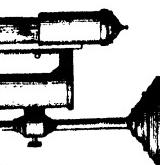


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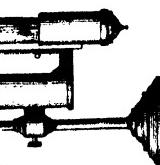


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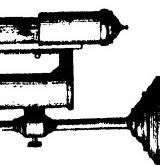


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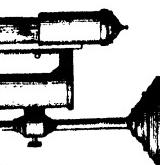


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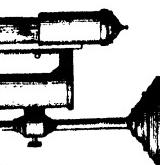


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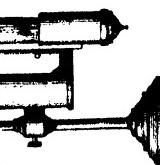


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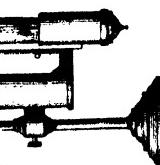


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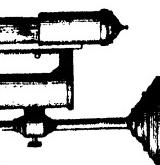


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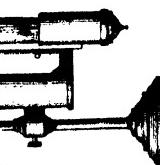


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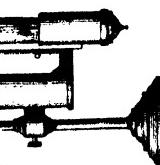


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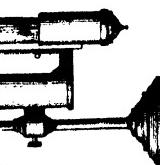


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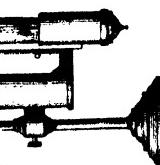


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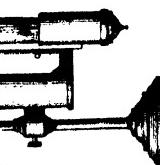


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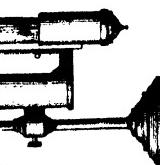


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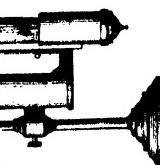


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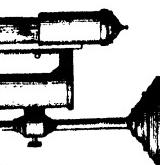


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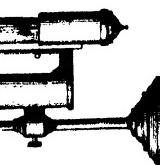


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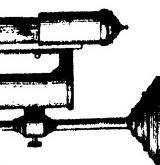


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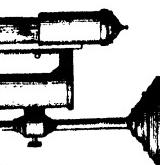


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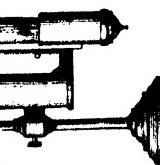


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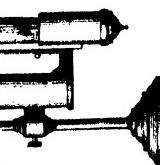


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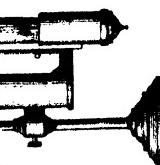


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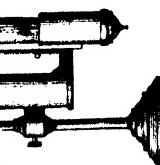


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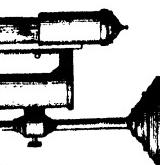


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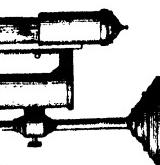


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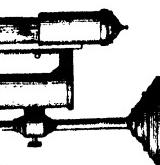


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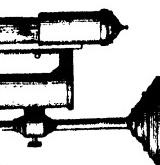


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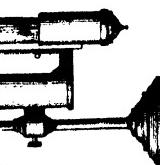


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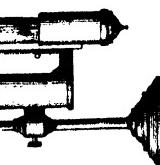
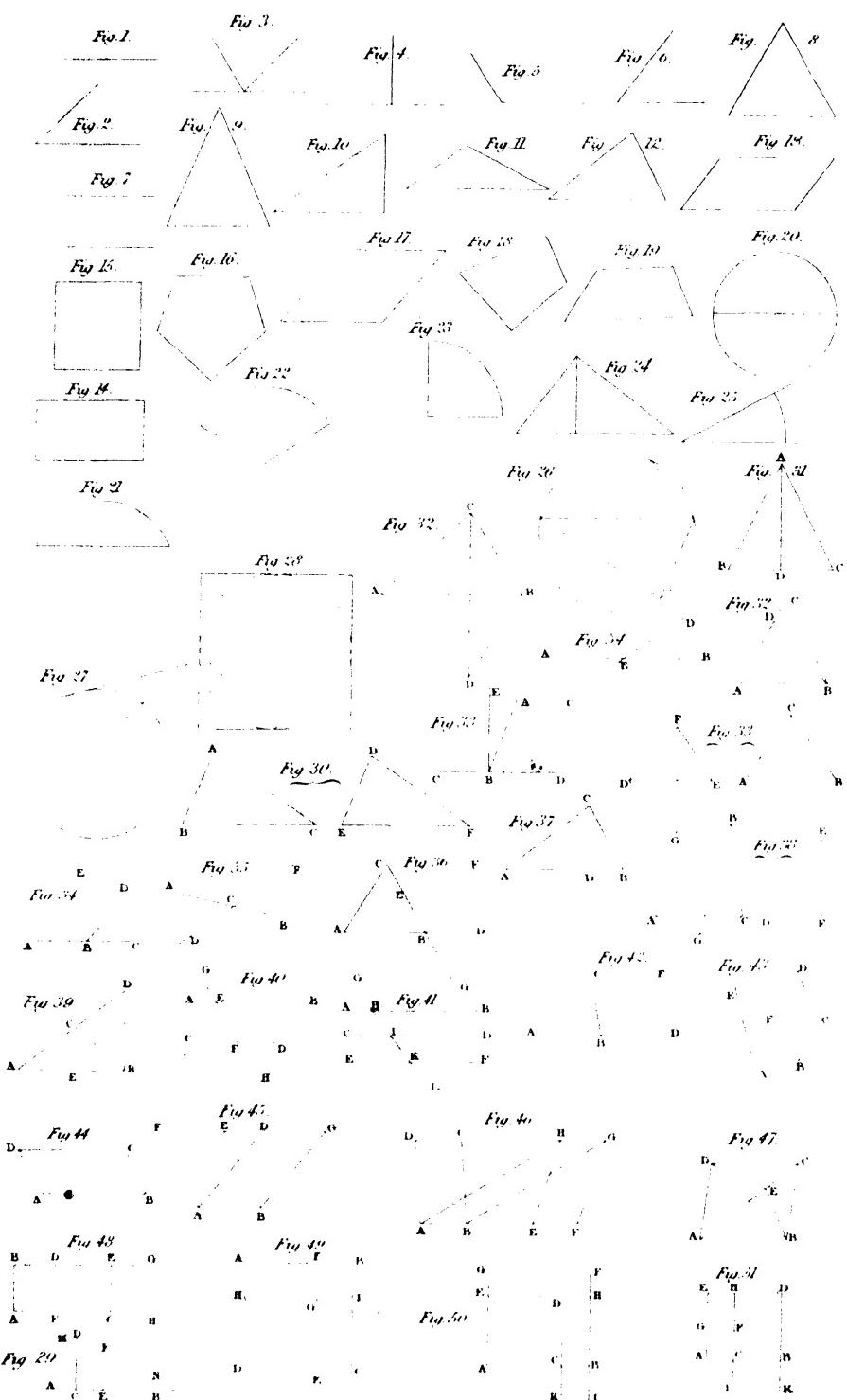


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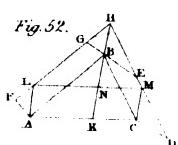


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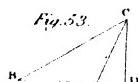


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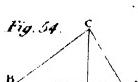


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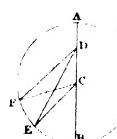


Fig. 56.



Fig. 57.

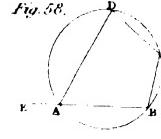


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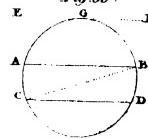


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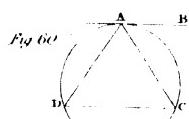


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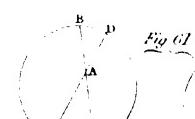


Fig. 61.



Fig. 62.

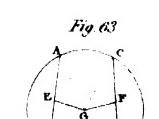


Fig. 63.



Fig. 64.

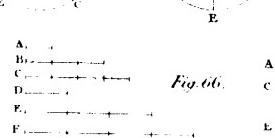


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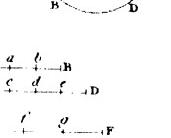


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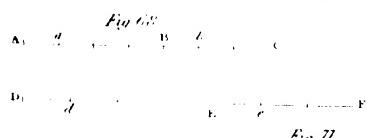


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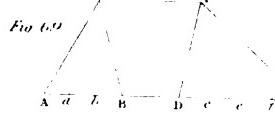


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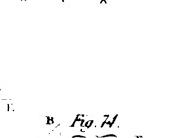


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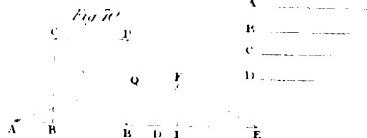


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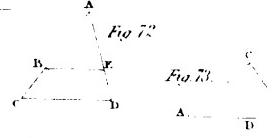


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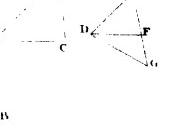


Fig. 72.



Fig. 73.



Fig. 74.

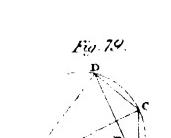


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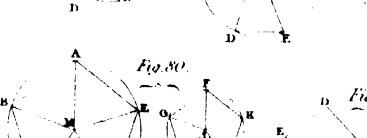


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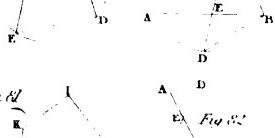


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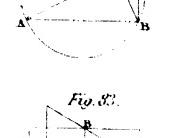


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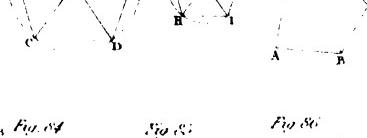


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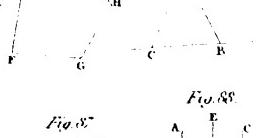


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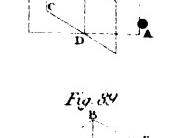


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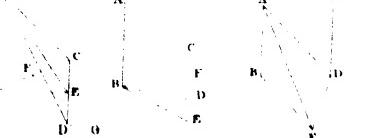


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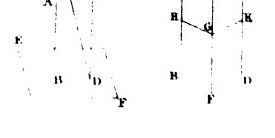


Fig. 83.



Fig. 84.



Fig. 85.

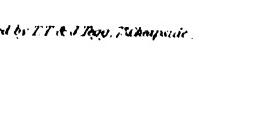


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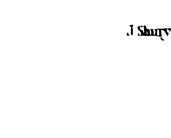
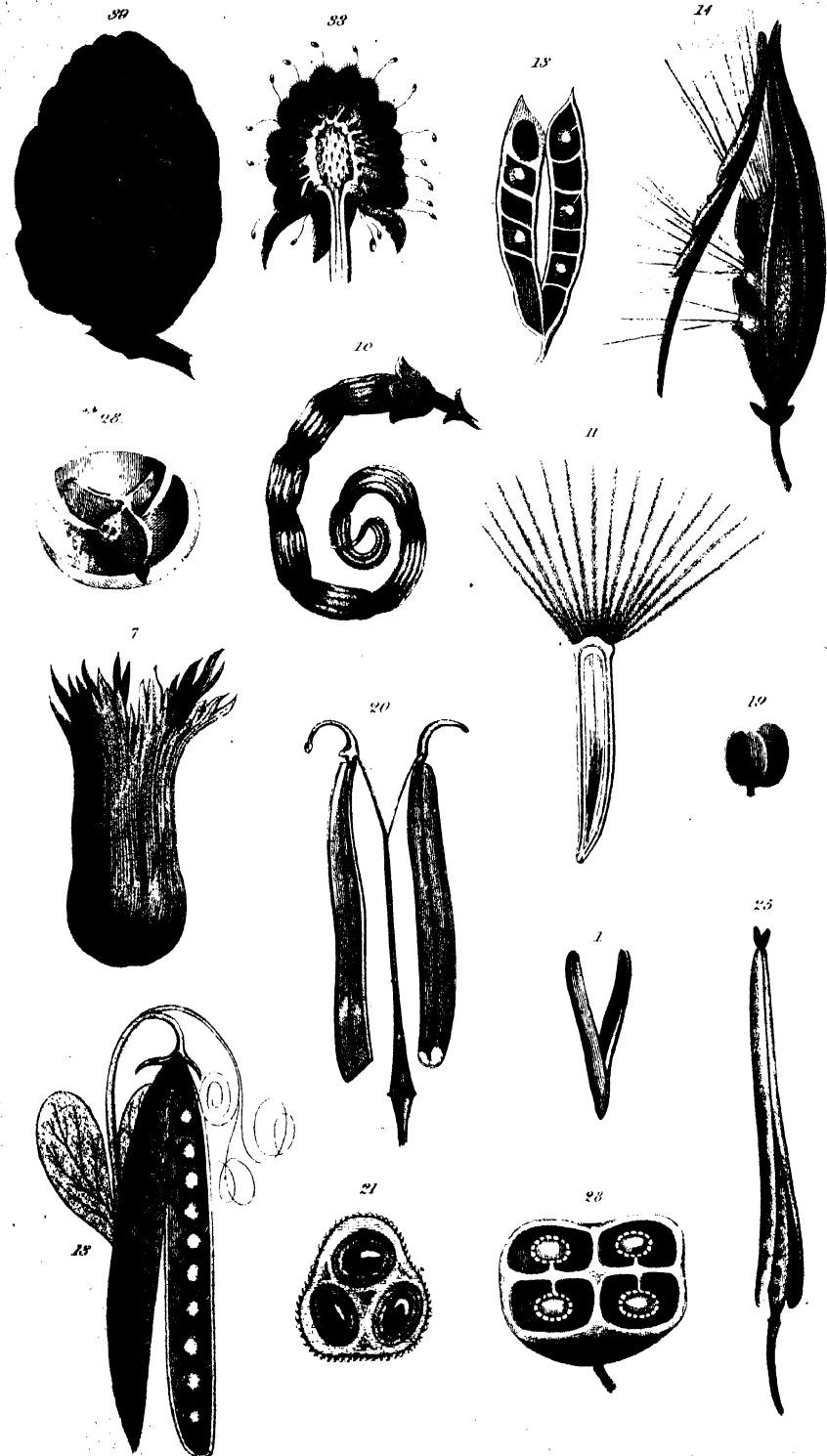
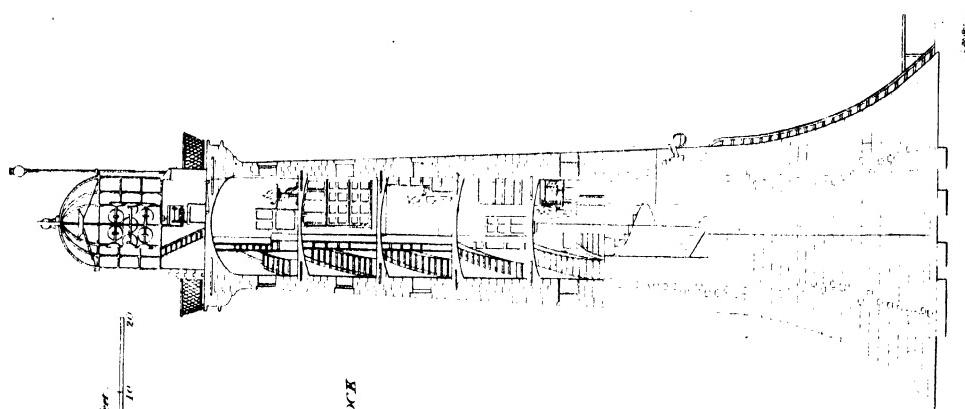


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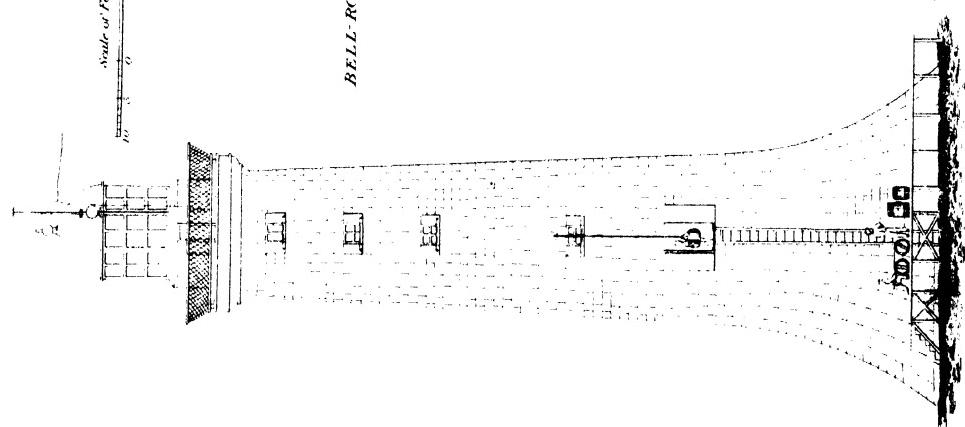








BELL-ROCK



EDDYSTONE

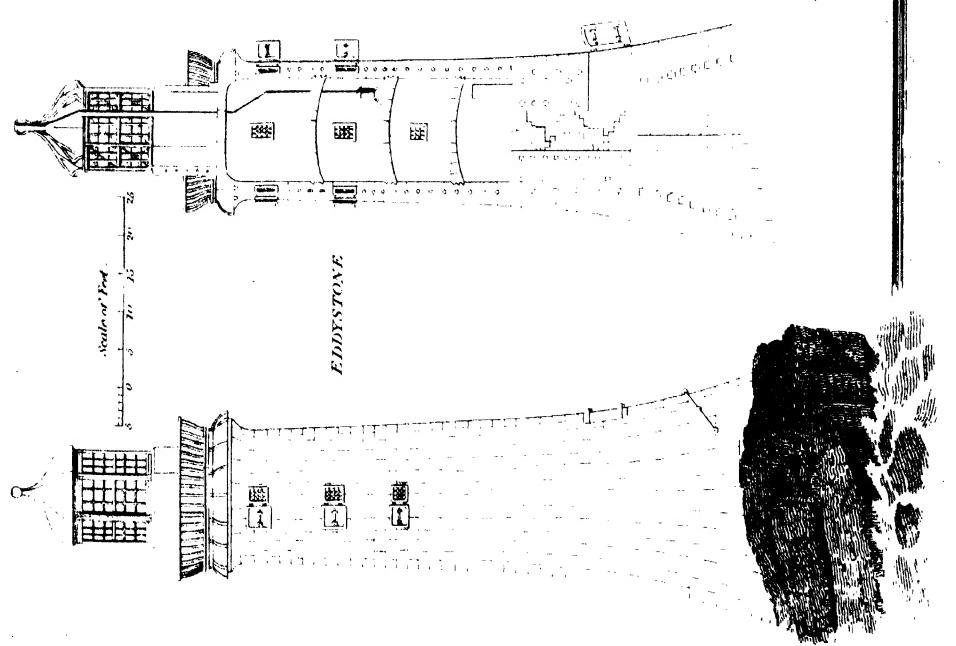




Fig. 1.



Fig. 2.



Fig. 4.

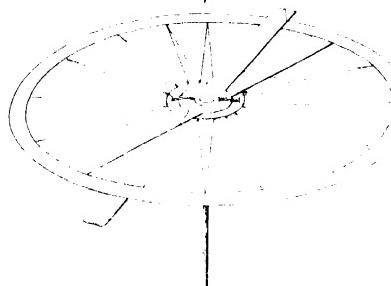


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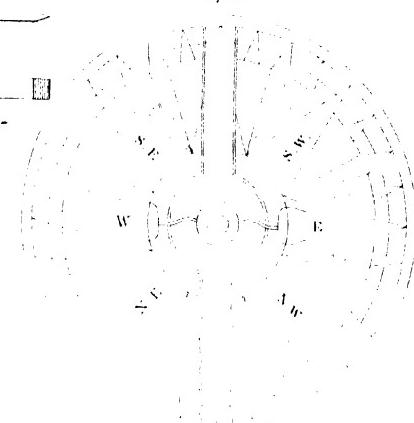


Fig. 5.



Fig. 6.

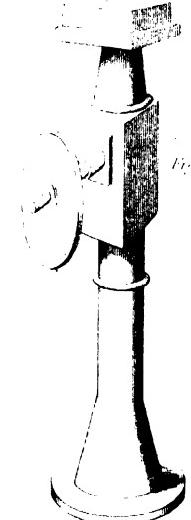


Fig. 8.

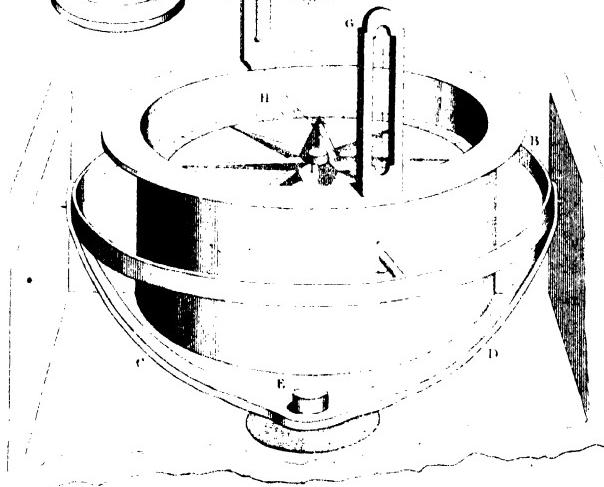
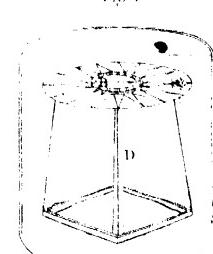
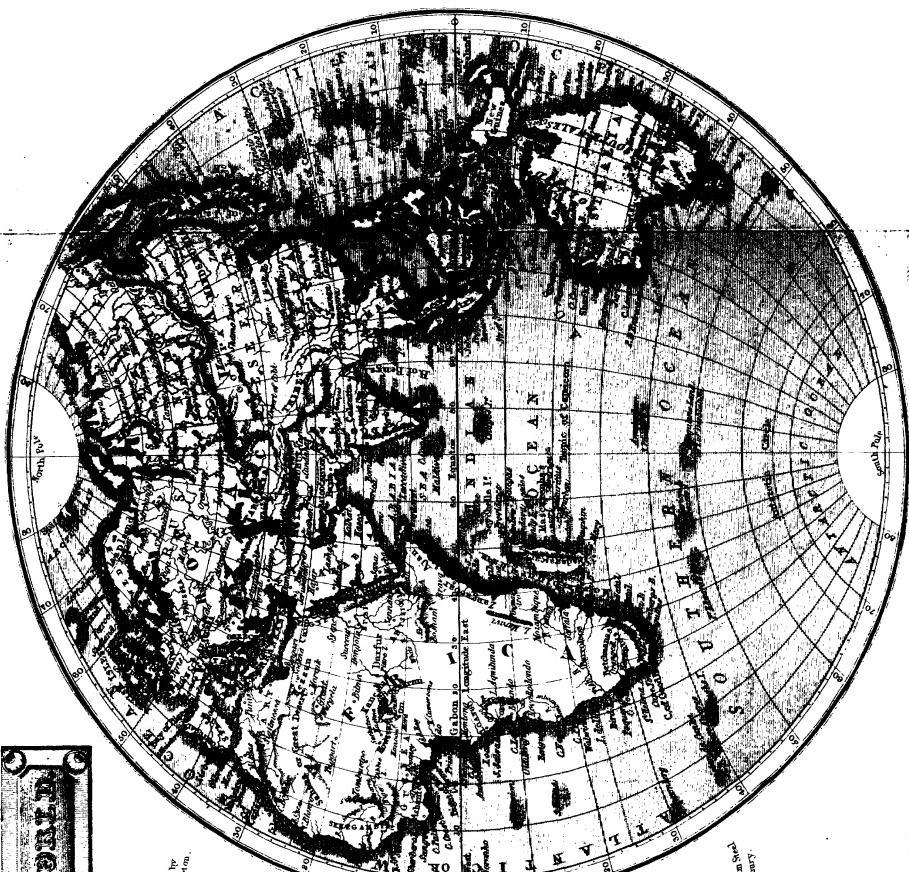


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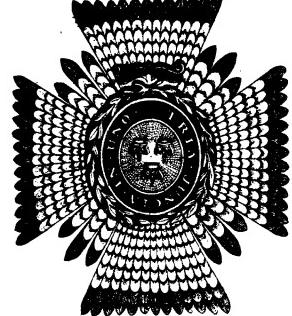




London. Published by Thomas Pegg. Photographed

by J. Smart.

Star of the Order of the BRITANNIA.



Star of the Order of the GARTER.

Star of the Order of the BATH.



Star of the Order of the SOVEREIGN.

Star of the Order of the THISTLE.

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Order

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BATH.

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the

BRITANNIA.

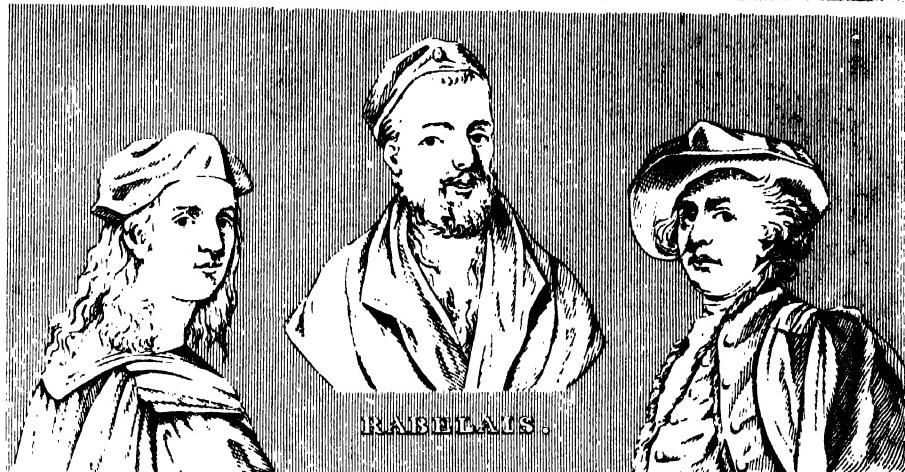


BRITISH ORDERS OF KNIGHTHEOOD.

PLATE V.

PLATE V.





R. GURNE,

R. RALPHS,









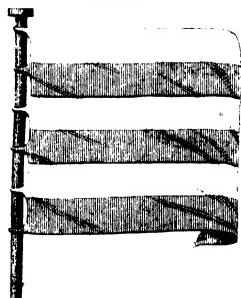




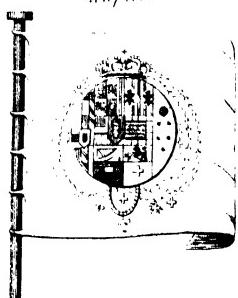
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PLATE III.

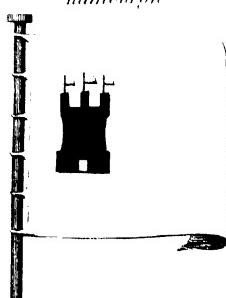
*Tunis.*



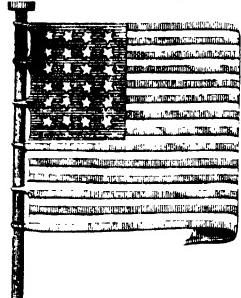
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*Hamburg.*



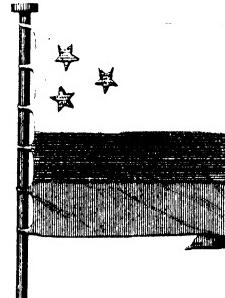
*United States  
of America.*



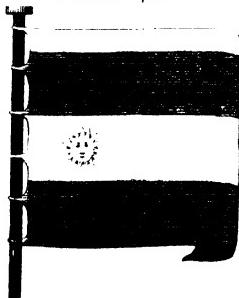
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*Columbia.*



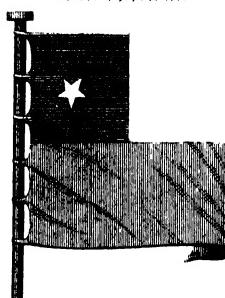
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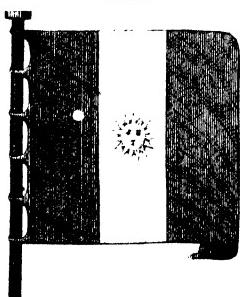
*Morocco.*



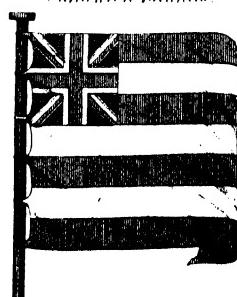
*Chile Merchant.*



*Peru.*



*Sandwich Islands.*



*Ionian Isles.*



## ELECTRICAL APPARATUS.

Fig. 6.

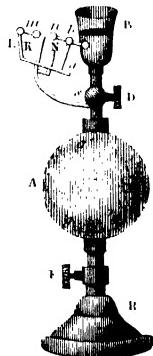


Fig. 7.

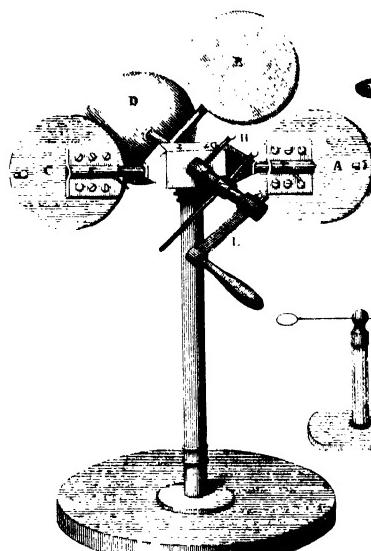


Fig. 8.

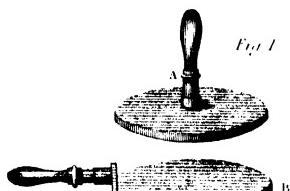


Fig. 9.

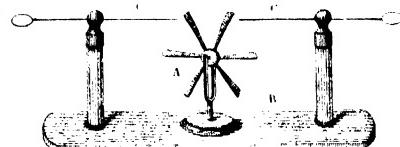


Fig. 10.

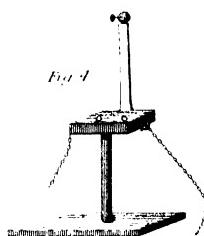


Fig. 11.



Fig. 12 &amp; 13.

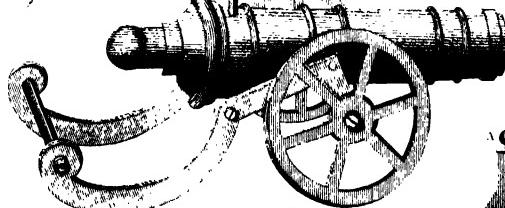


Fig. 14.

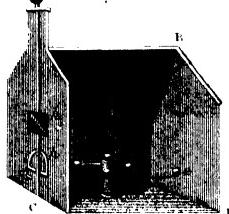
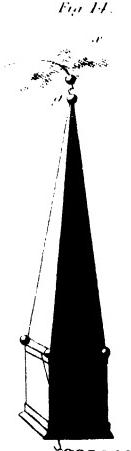


Fig. 15.

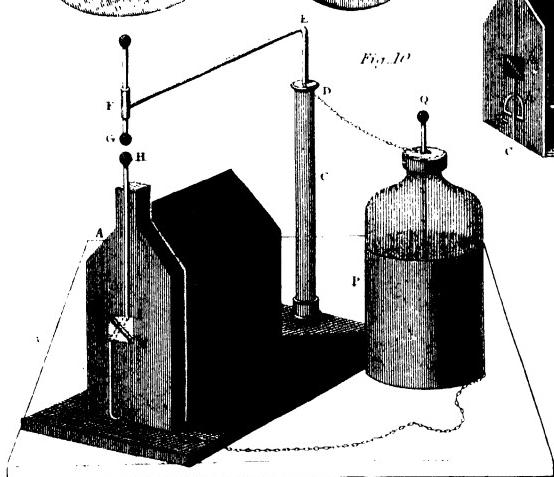
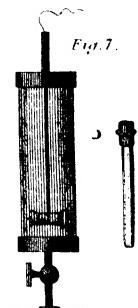


Fig. 16.







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Fig. 2.

1

AMERICA LATIDA

Eng. I

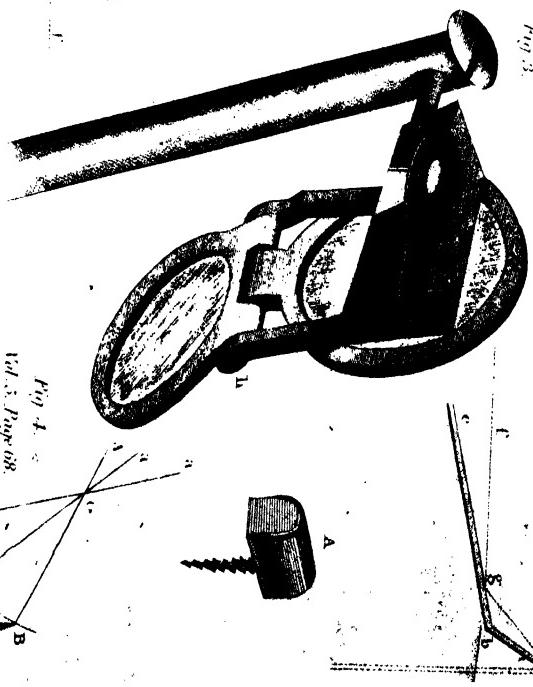
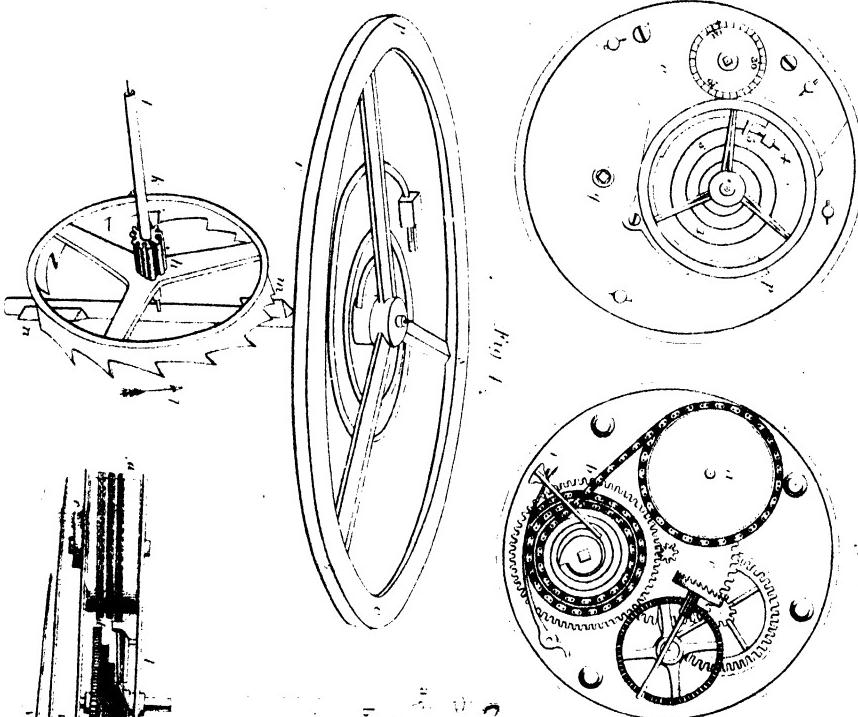


Fig. II

AMERICA LATIDA

1

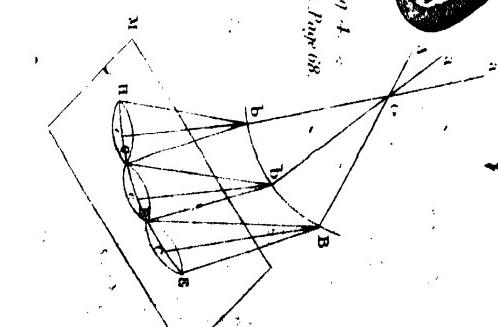


Fig. 7.

## DIALLING.

PLATE II

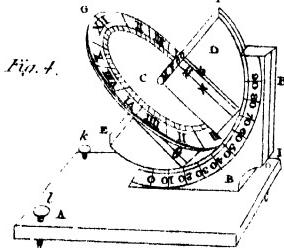
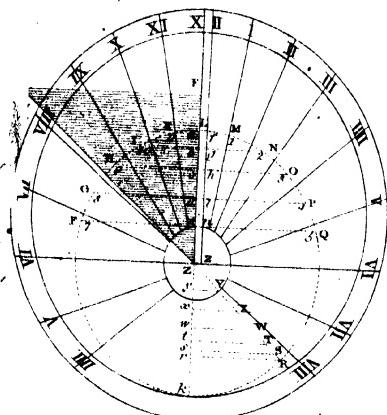


Fig. 2.

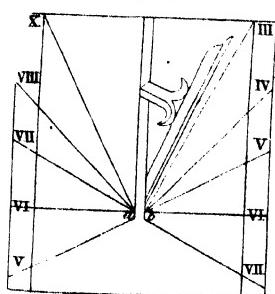


Fig. 9.

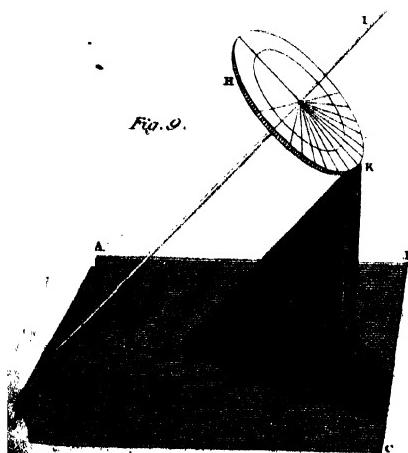


Fig. 8.

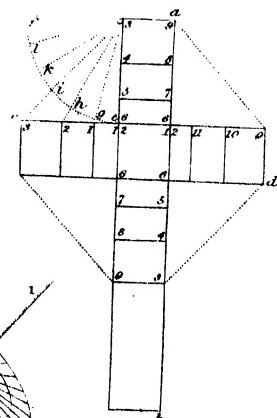


Fig. 6.

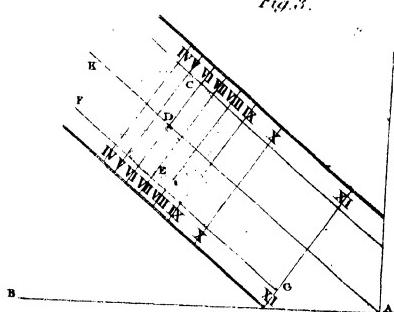
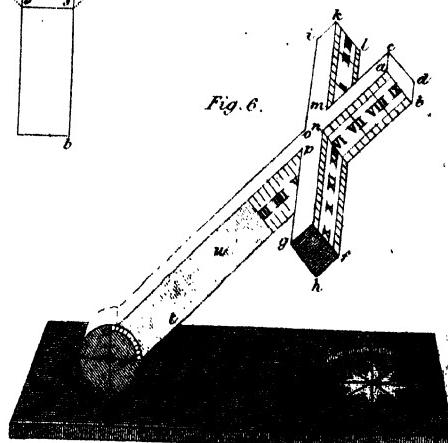
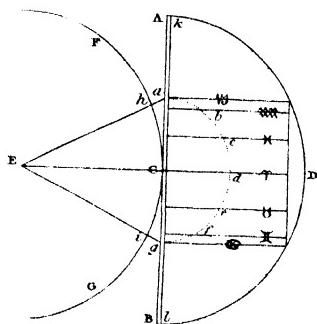
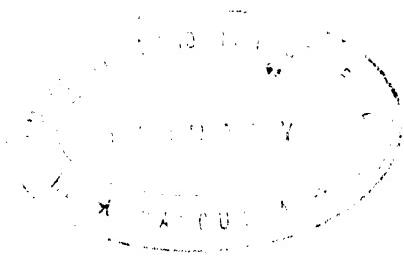


Fig. 5.











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